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standard contents

every issue does not necessarily contain all these contents, but they are the regular features which continually recur

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Details of Planning, Construction, Finishes and Costs
Buildings in the News
Building Costs Analysed

Architectural Appointments Wanted and Vacant

No. 3155] [VOL. 122

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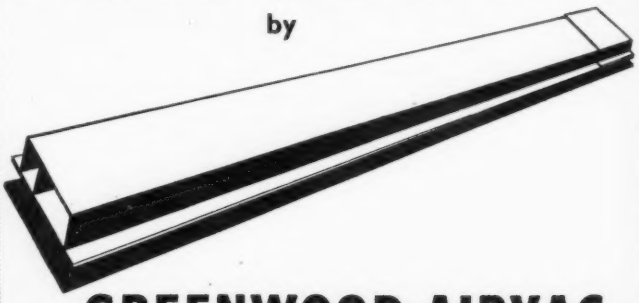
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. 28 Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organization, Ltd. 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
GBPA	Gypsum Building Products Association, 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. C/o R. H. Davies, F.R.I.B.A., 44, Lowndes Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215



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Bob Wilson holds a full house

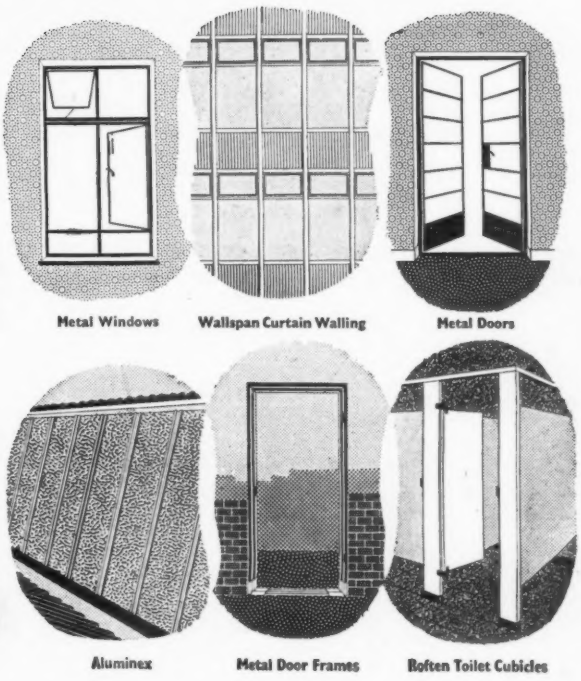
A quick, ready smile, merry eyes, a pleasant wit—yes, Bob Wilson*, our London Area Manager, is a born raconteur and good value at a party. But don't underestimate his poker! Nor his organizing ability. With so many of the nation's architects concentrated in his area, he has to be on his toes and keep his large efficient team of draughtsmen, estimators and window fixers on their toes. Sometimes, perhaps, he feels a nostalgia for the old days. There is so little time for the flying ("it is a bit expensive, anyway!"), the motor racing, the rough shooting and the landscape painting he used to enjoy so much.

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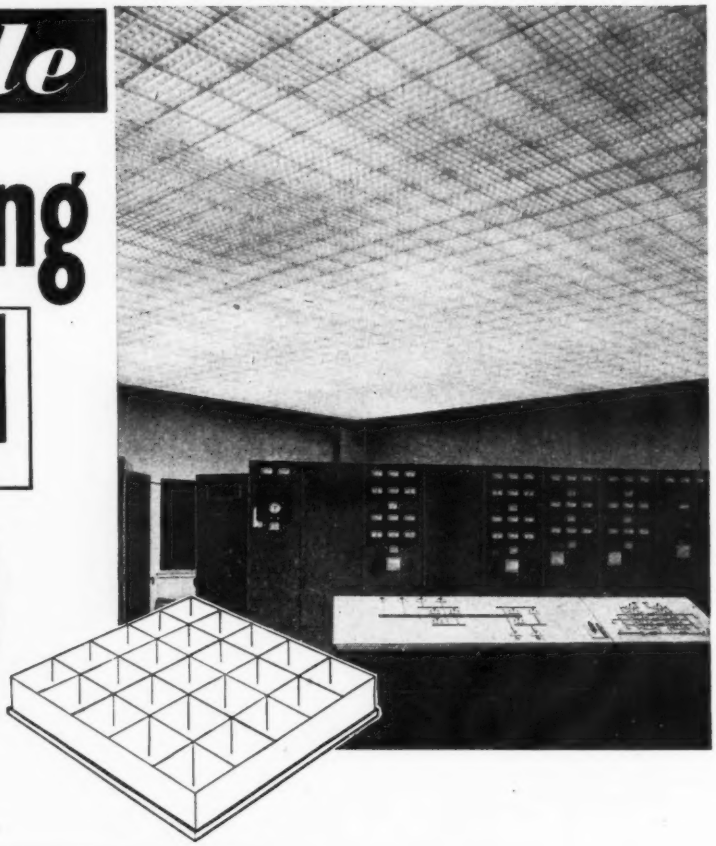
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TRETOL INFORMATION SHEET **For Your Files**

THE USES OF MORTAR PLASTICISERS

The need for reduced costs and greater efficiency is resulting in the increased use of mortar plasticisers throughout the building industry. This information sheet gives a brief description of the function of these workability aids.

THE THEORY governing mortars for brickwork is that the mortar joint should always be weaker than the brick, so that when thermal or moisture movement takes place in the structure as a whole, the joints craze or crack in preference to the possible formation of major structural cracks in the bricks.

To obtain this weak mortar joint it is necessary to use a mix with low cement and high sand content. These mixes often become unworkable, particularly where sharp sands are used and it has been the practice in the past to recommend the addition of hydrated lime as a plasticising agent.

As, however, lime expands and cement contracts during hydration, two opposing stresses are set up in the mortar during the drying out and hardening processes and this is very largely the basic cause of the quite common crazing and movements of joints away from the brickwork. The development of mortar plasticisers now makes it possible to adopt lean cement and sand mixes without resorting to the addition of lime.

Underlying Principles.

Tretol Morta-Mix, the mortar plasticiser, works on the principle of entraining in a mix approximately 10 per cent. more air than normal. This air is in the form of minute stable bubbles, and these, by reducing internal friction within the mortar, provide a marked improvement in plasticity and workability.

The air entrainment is obtained by a physical and not a chemical action and there is, therefore, no deleterious effect on the mortar. Tretol Morta-Mix removes surface tension from the gauging water and to a certain extent, acts as a lubricant for the sand.

Because of the air entrainment the mortar is given a minute cellular construction which provides more tolerance for movement within the mortar, thereby reducing cracking and crazing to a minimum. The thermal insulation provided by this cellular construction of the mortar prevents the penetration of frost beyond the initial face of the mortar or rendering and provides a high degree of resistance to damp penetration.

Mortars for brickwork.

By allowing the elimination of lime the use of Tretol Morta-Mix will enable typical mixes of 1:1:5 or 1:1:6 to be adjusted to 1:6 using, if preferred, coarse sharp sands; Mixes of 1:2:9 and 1:3:12 can similarly be adjusted to 1:8. In addition to easier flow, improved wetting properties of the mortar will be obtained, ensuring better bonding between brick and mortar joints, greatly reducing the tendency to crazing and shrinkage of the mortar joints.

External renderings.

Mixes of 1:6 as indicated for brickwork, using really coarse sharp sands, can well be employed with the aid of this plasticiser without the slightest objection being raised by plasterers. The renderings hang extremely well in their wet state and can be brought to a good finish without necessity for over-trowelling; thus avoiding bringing the "fat" to the surface with resultant crazing. By the use of selected sands, and by employing these lean mixes, a valuable contribution is made towards reducing crazing and shrinkage cracks.

The plastic nature of the mix provided enables very easy working of surfaces to obtain texturing where necessary, also, by improved wetting, better adhesion between thrown or embedded aggregate on to the surface of the final coat of rendering is obtained.

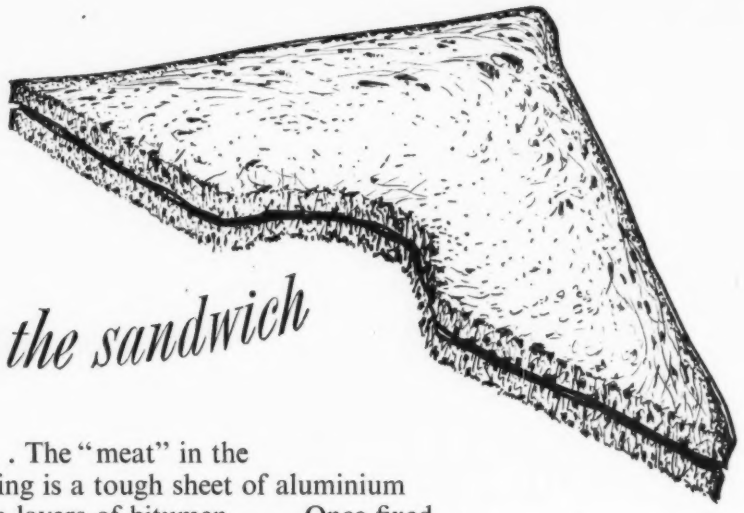
Internal cement renderings for backing coats.

The advantages gained by the use of lean mixes are particularly apparent on breeze blocks and other internal surfaces not possessing high physical strength. Renderings consisting of cement, sand and Tretol Morta-Mix only, eliminating completely the need for lime, will provide excellent backing coats for plaster finishes and will not cause any chemical reaction resulting in blowing, or other physical damage to the setting coats. This will apply to all typical plasters used for work of this nature, including Hemihydrates, Anhydrous, Anhydrites, Keenes, etc.

For further details please write for Tretol Morta-Mix leaflet AJ/1

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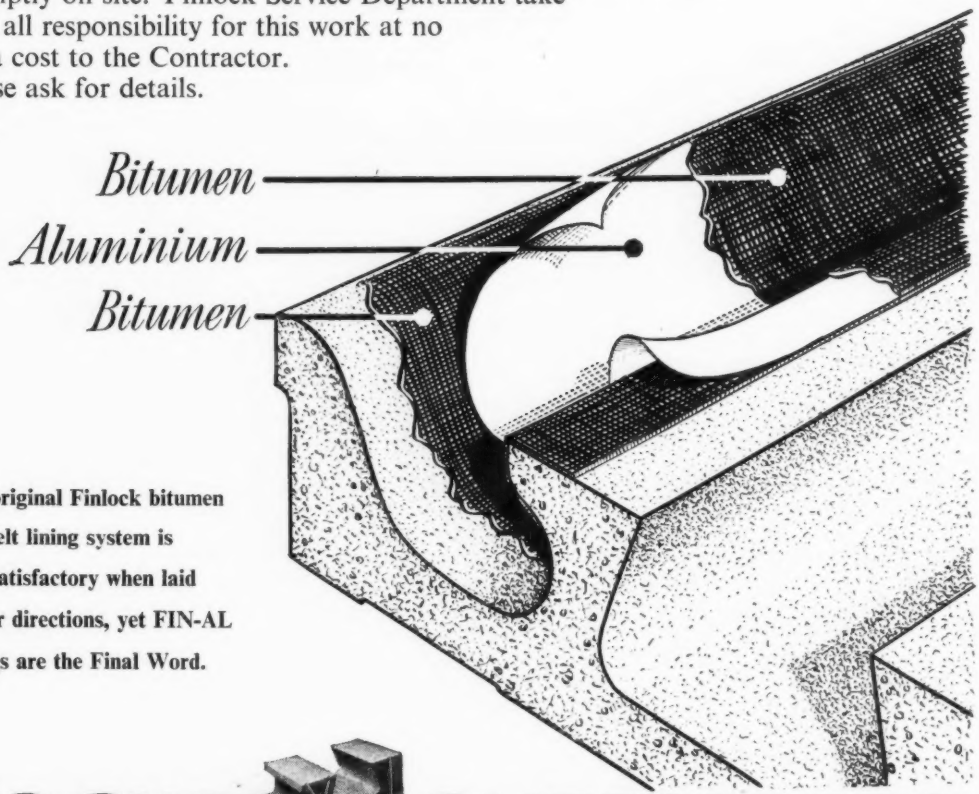
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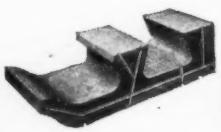
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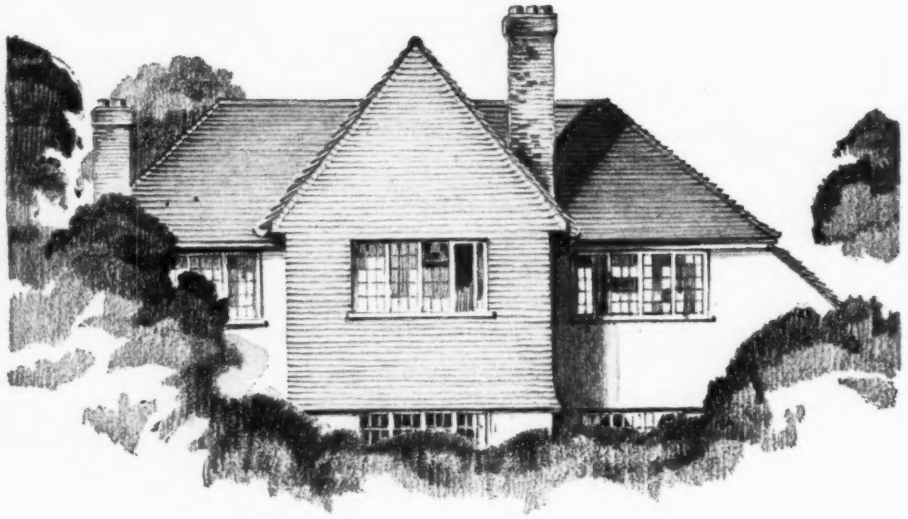
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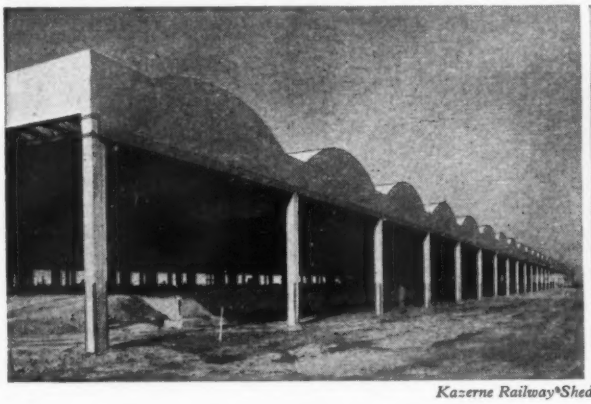
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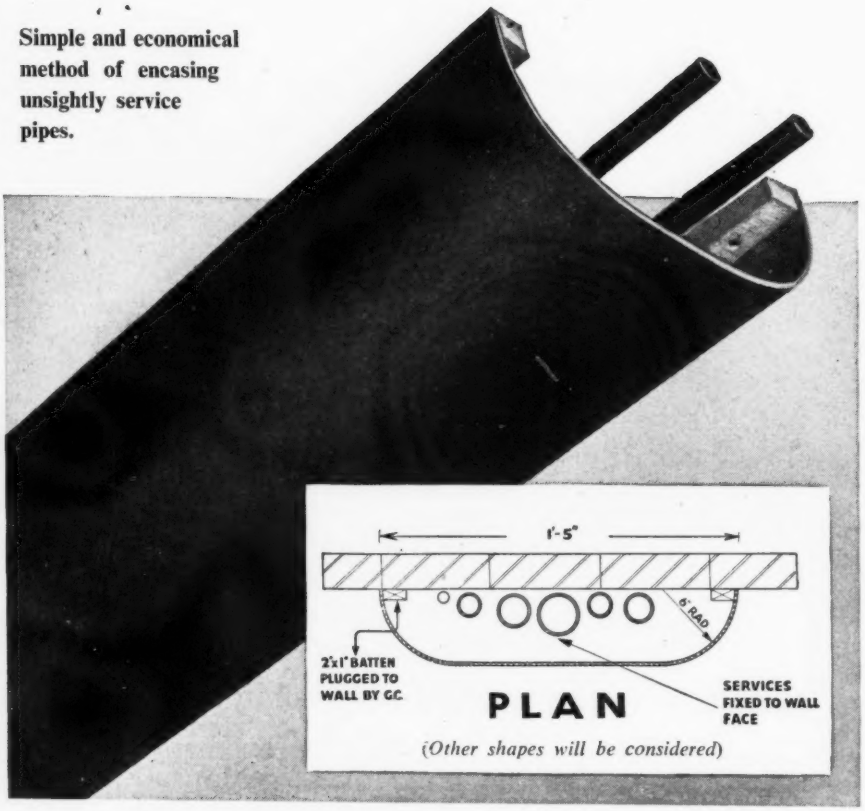
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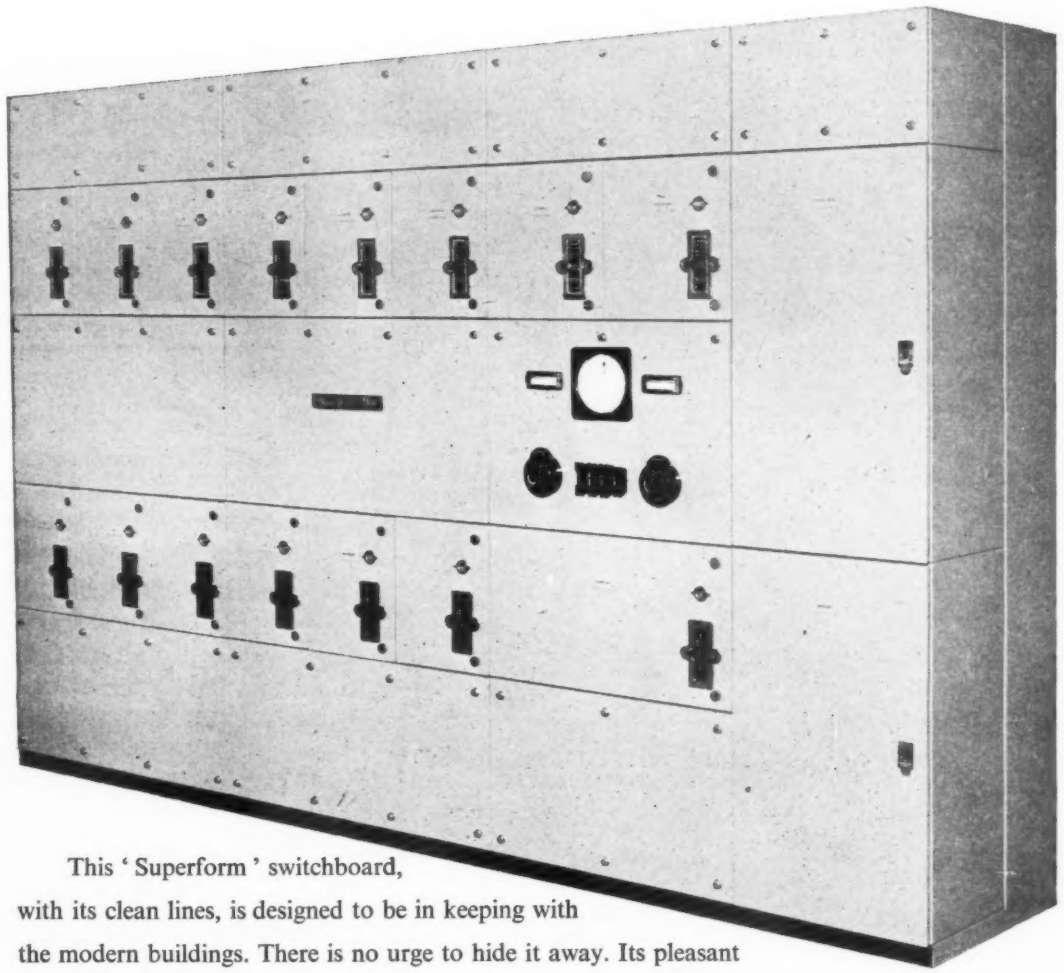
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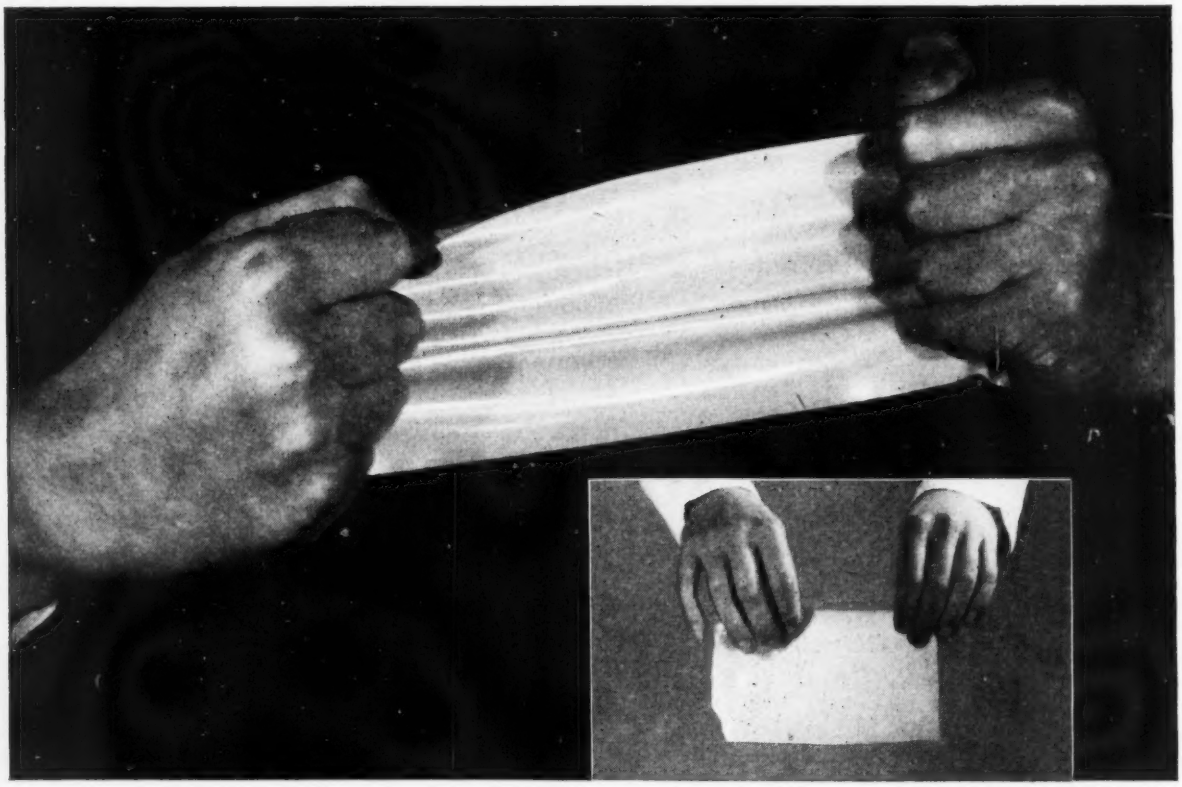
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INSIDE STORY



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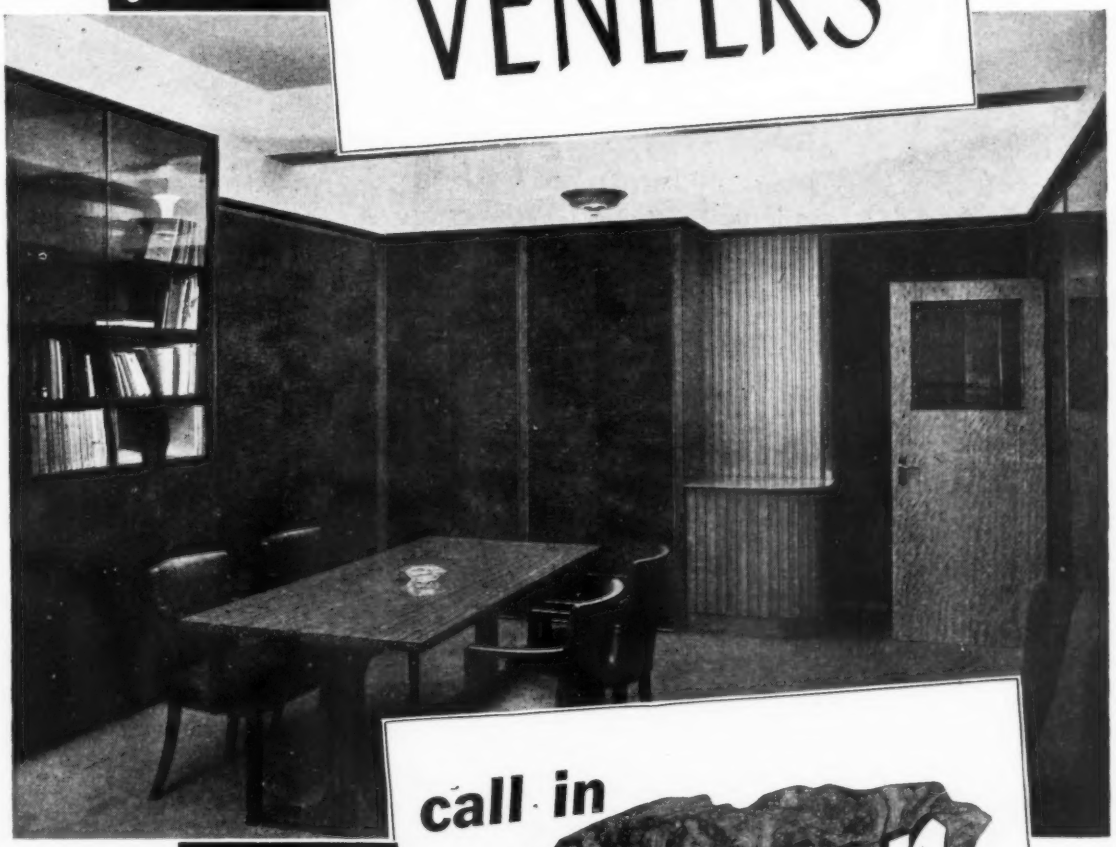


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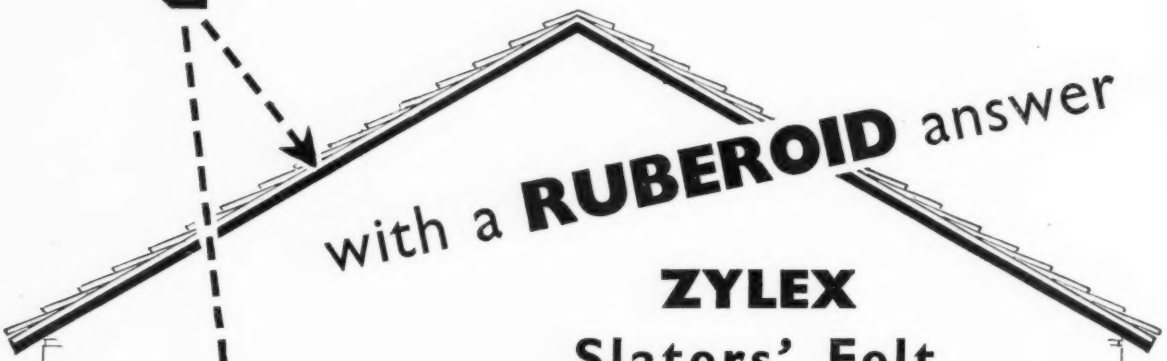
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for a house at Luton, Bedfordshire

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Roofing Contractors: Roberts Adlard & Co. Ltd., Watford

General Contractor: J. Newell, Caddington, Nr. Luton

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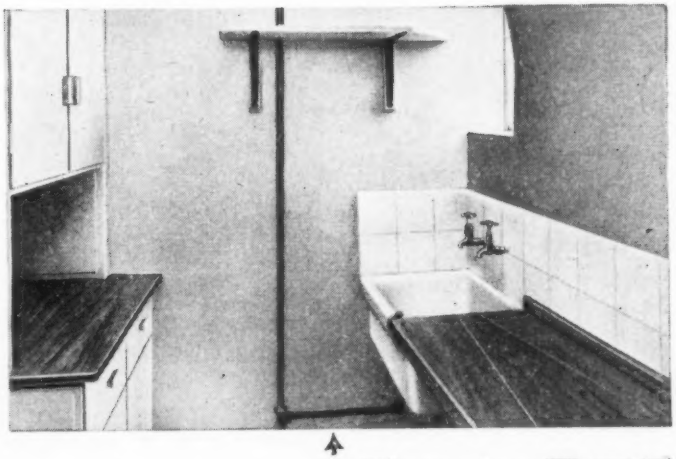
The L.C.C. Modernises with Radiation

Chevin Convector Fires —easily installed —cut running costs

A thoroughly efficient heating system substantially increases the value of property. That's why many owners have taken advantage of the 1954 Housing Repairs and Rents Act and installed Radiation convector Fires in place of wasteful, old-fashioned heating appliances.

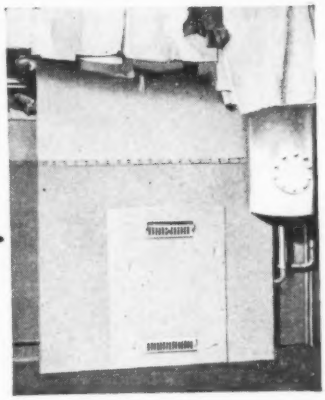
The Chevin has found favour with the L.C.C. and local authorities all over the country. Convected warm air from the Chevin can be used in a variety of ways: it will raise the temperature of a large sitting room; it can be ducted to heat another room; and it can also be supplied with a boiler—so saving the cost of installing and running a separate water heating apparatus.

In view of the impending Clean Air Act, it is important to remember that the coal burning Chevin gives an even more efficient performance on coke and other smokeless fuels. The Chevin has a built-in gas-ignition burner for trouble-free fire-lighting when continuous burning is not required.



ALL THIS

The Chevin Convector fire's high pressure boiler pipes hot water to the kitchen sink.



AND THIS

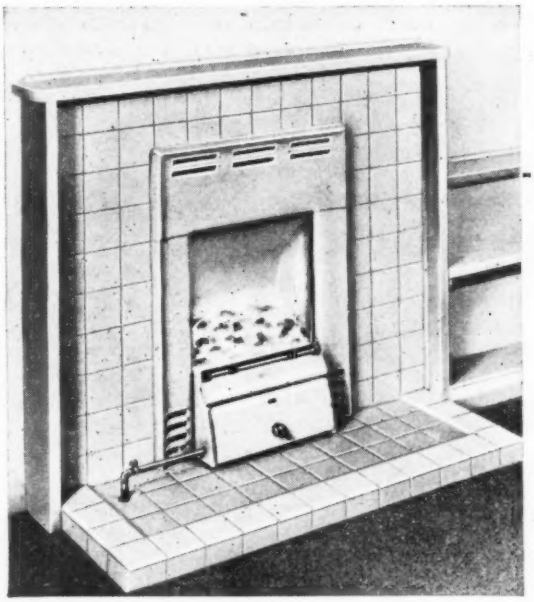
In the kitchen adjoining the sitting-room, convected warm air is turned on or off as desired.

AND THIS

Standard fuel supply for the fire also keeps hot water on tap in the bath room. Radiation's low-priced Swan White baths (the Magna, for example !) are popular installations in these new conversions.



FROM THIS



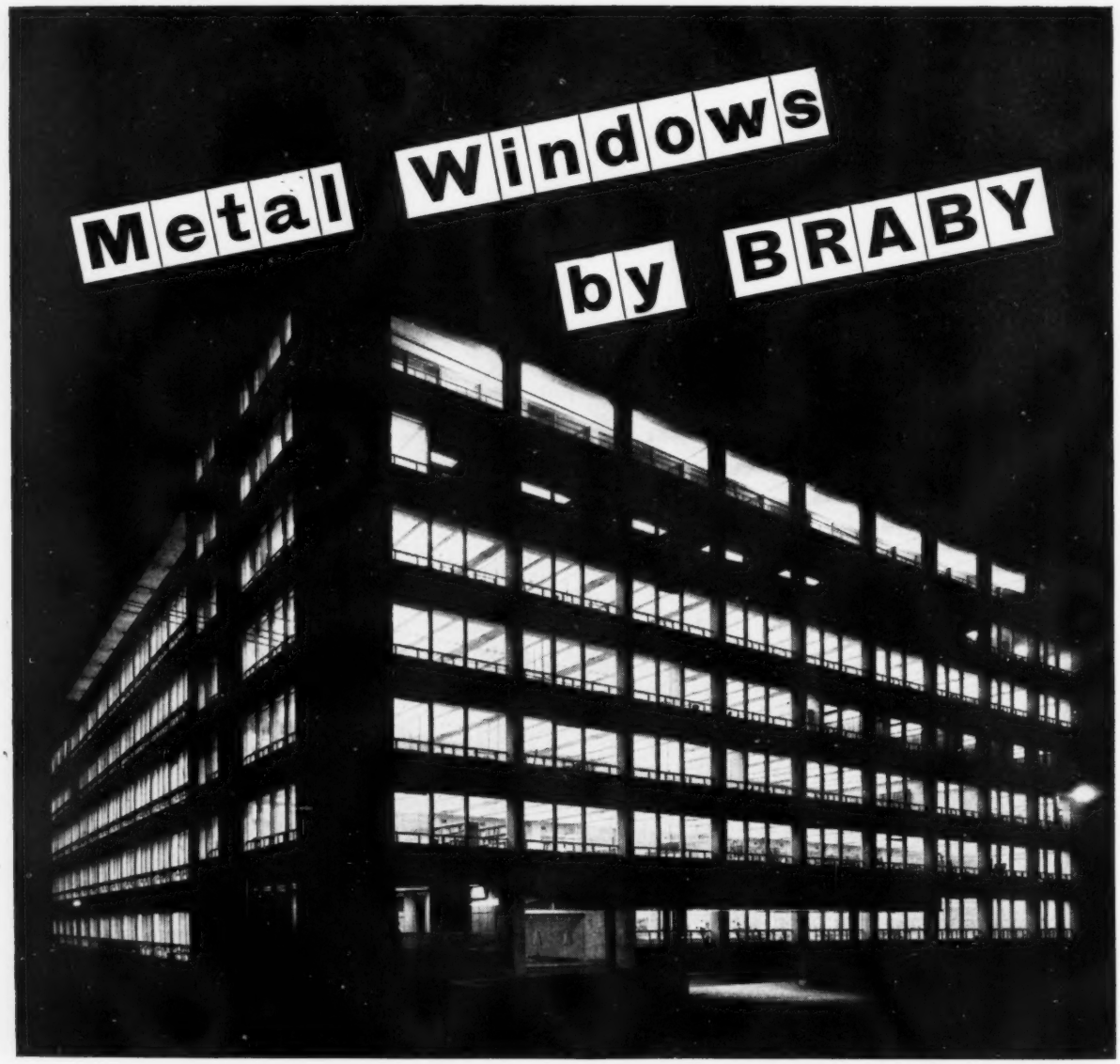
The CHEVIN Convector Fire

For Technical Information sheets, also the booklet "Modernising The Older House," write to the address below.

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Photograph by courtesy of The General Electric Co. Ltd.

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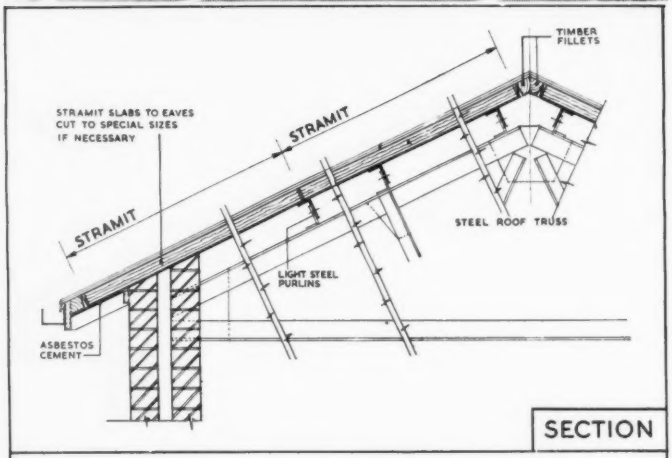
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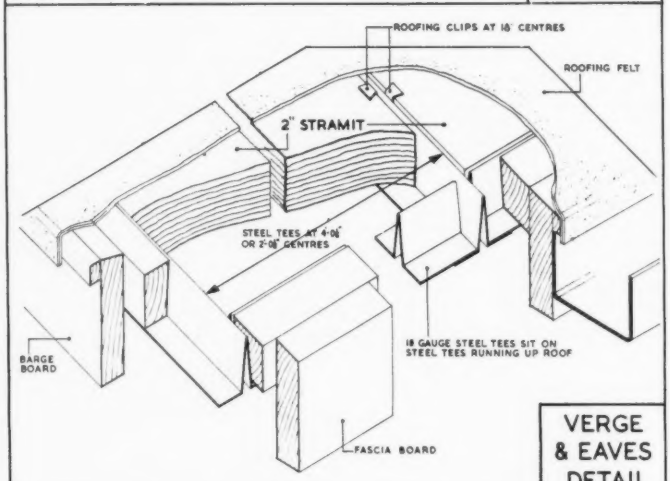
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Even in these enlightened times factories are still erected without thermally insulated roofs.

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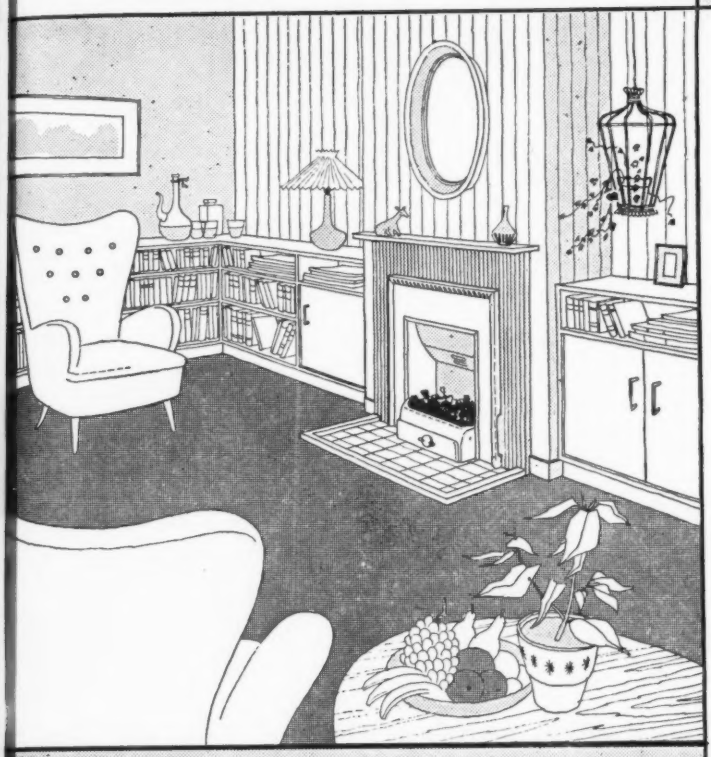
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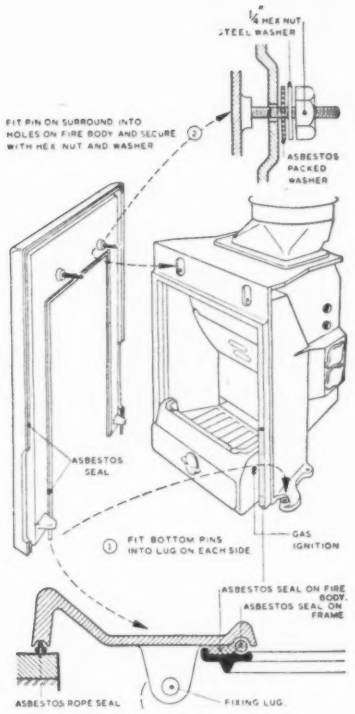


Elegant new convector panel

for the high output MARVEC fire

The Marvec heats up to 2,500 cu.ft. by radiation and convection and — if it is needed — will heat the water too.





SECTION THROUGH FRAME

The NEW CONVECTOR PANEL is far and away more pleasing to look at than the usual hot air grilles. From the illustration (left) you will see that the new panel is an extremely neat frame which does away with the necessity for grilles: its removal allows access to the flue adaptor and convection chamber.

The panel, for use with boiler or non-boiler models of the Marvec, is fitted after the tile surround is in position, thus making installation exceptionally easy.

If the air for the convection chamber is required to be taken from outside the room in which the fire is fixed, the Convector panel can be supplied without the cut-outs in the return of the jambs.

SPACE HEATING CAPACITY

Using the convector panel to introduce convected air to the same room, 2,250 cu.ft. can be heated (or 2,500 cu.ft. with the non-boiler model). If convected air is used for warming other rooms, full heating up to 1,750 cu.ft. is provided, and background warmth for other rooms up to a total of 2,000 cu.ft.

Note: These figures apply to rooms of normal construction.

BOILER OUTPUT

Provided the system is compact the boiler can heat a towel rail in addition to supplying domestic hot water, or alternatively 45 sq.ft. of radiation surface (including unlagged piping) can be heated.

The fuel saving RESTRICTABLE THROAT

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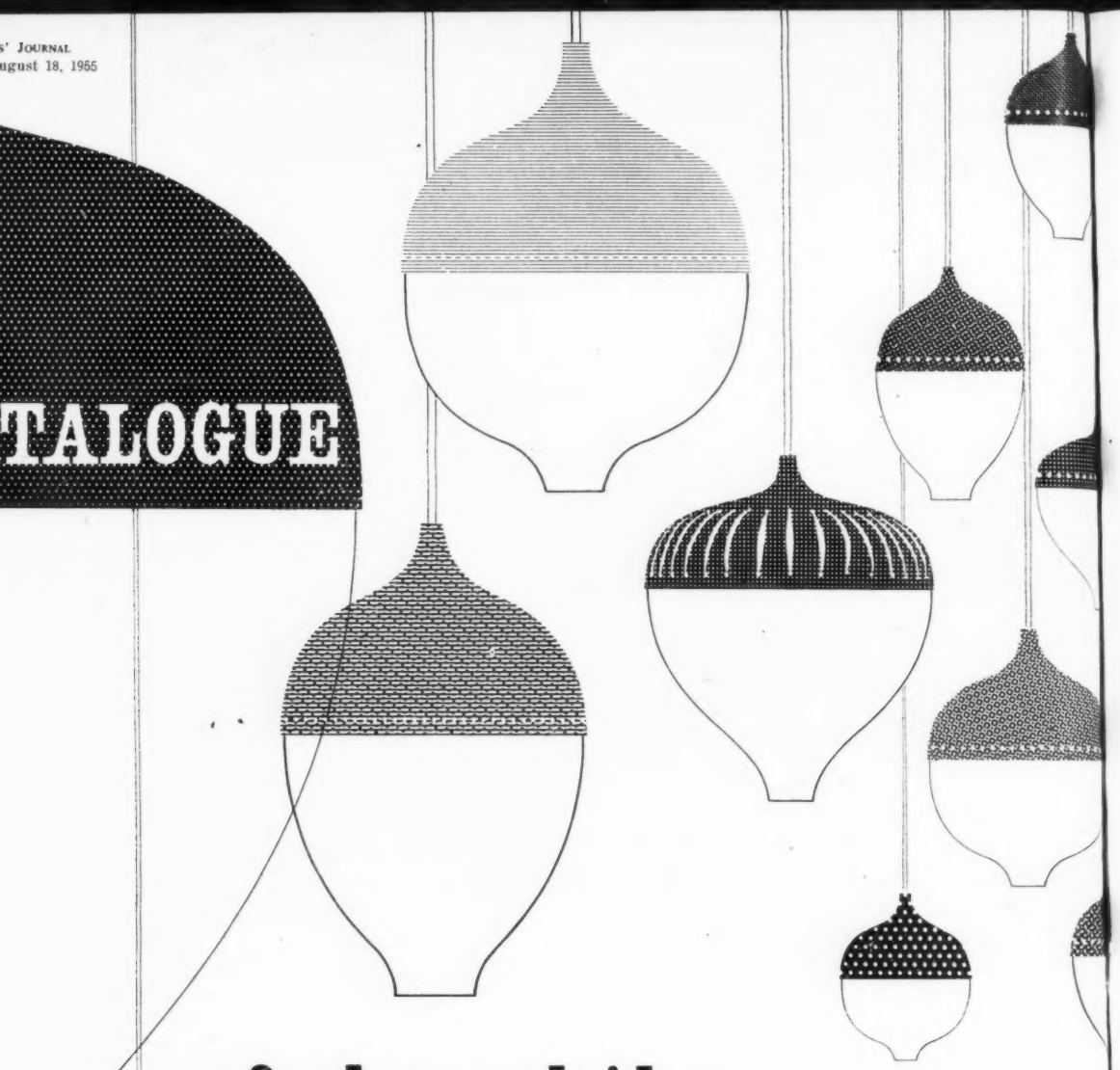
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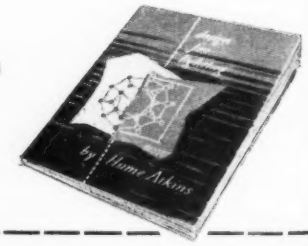
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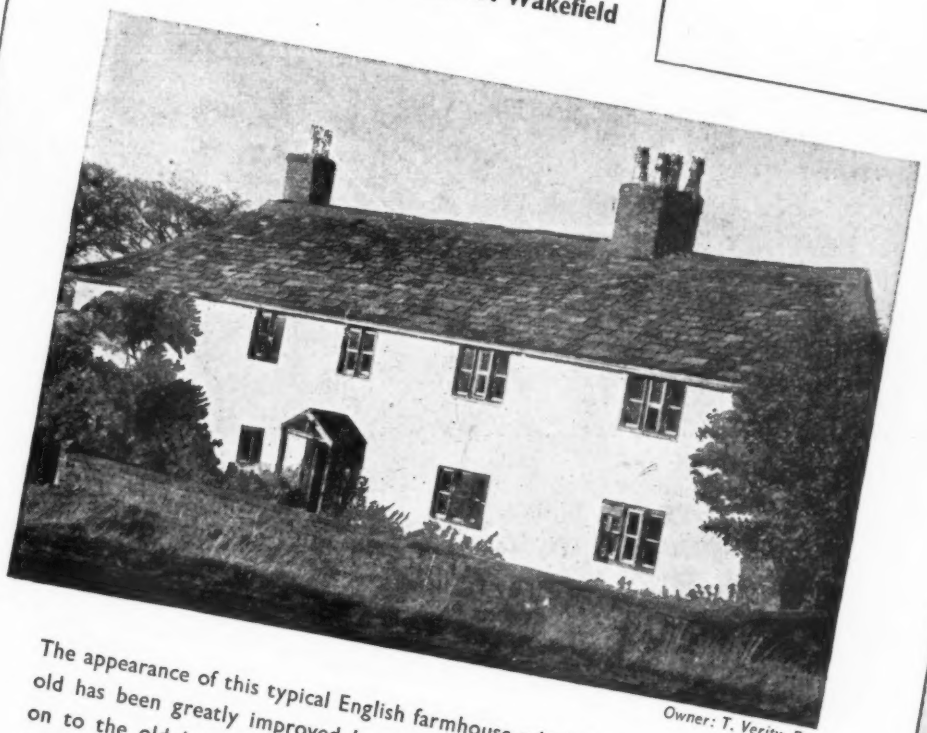


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Owner: T. Verity, Esq.

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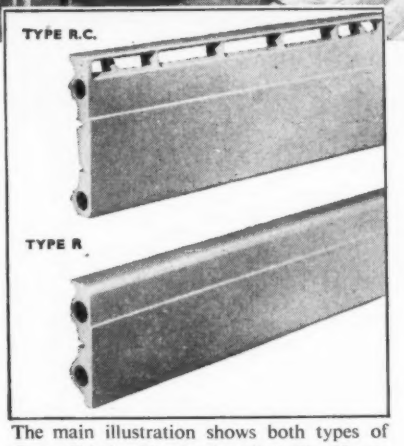
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The Crane skirting heating system



The main illustration shows both types of Crane Skirting Heating installed. The 9″ type 'RC' is particularly suitable for use under large windows with low sills. Also for public buildings such as libraries and art galleries, etc. Manufactured in 2′ lengths only. The 6″ type 'R'—for flats and houses—is also manufactured in 2′ lengths. On walls where heating is not required, matching wood skirting can easily be included for continuity. Both types are normally delivered unassembled unless otherwise instructed. Standard pipe connections ¾″—both types. Crane Skirting Heating is primarily designed for inclusion in buildings in the course of construction, but can also be installed in existing property.

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London Showrooms: 118 Wigmore Street, London, W.1

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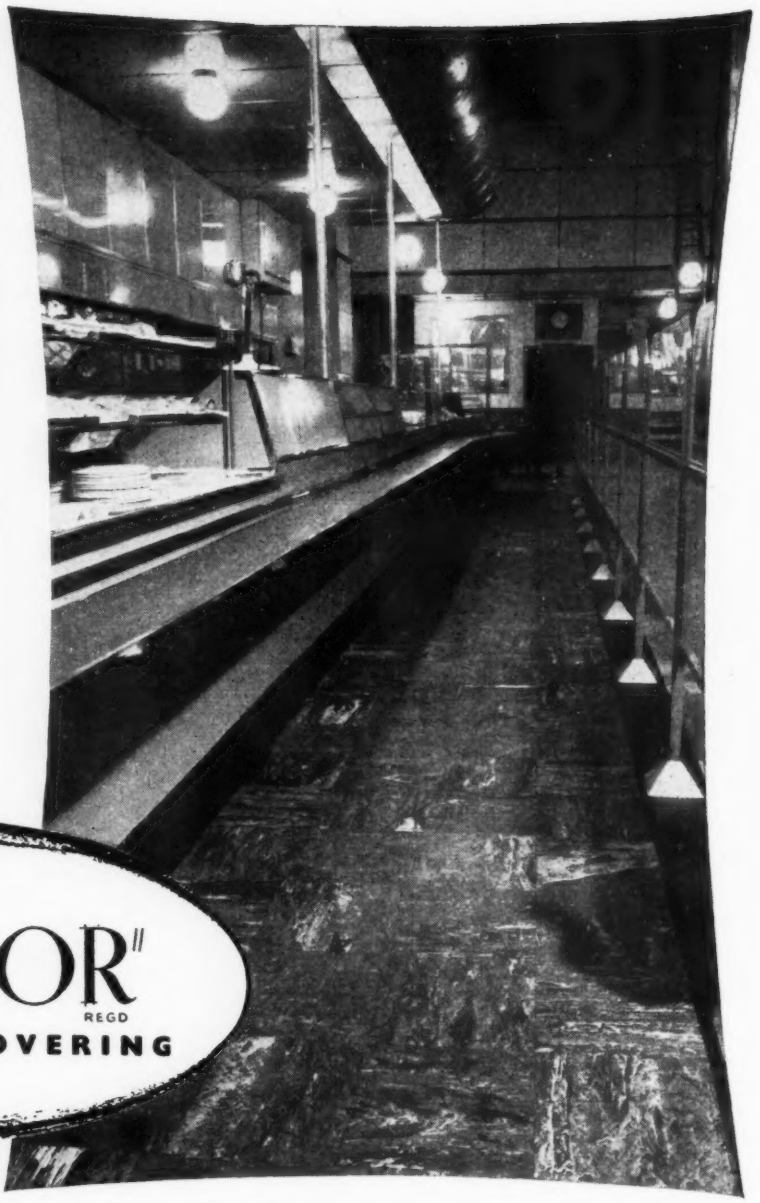
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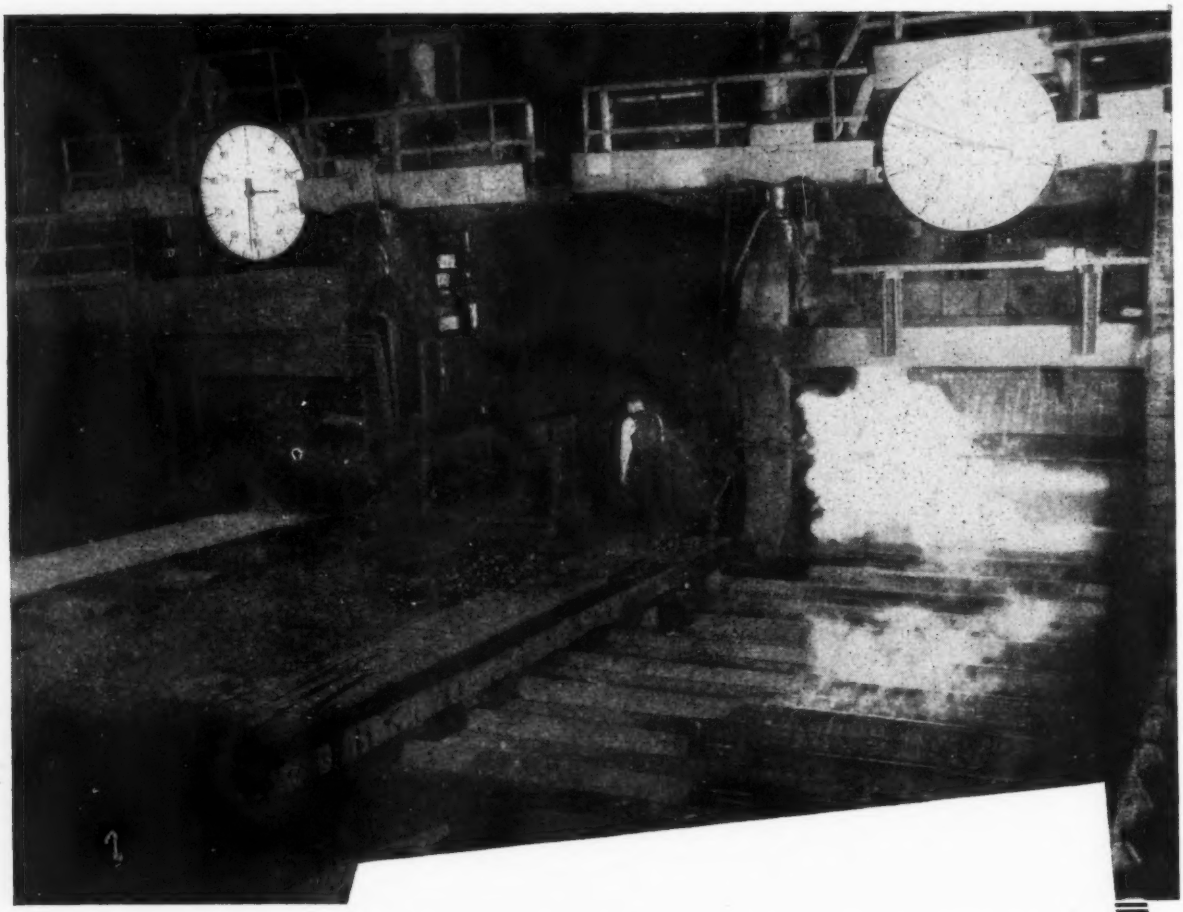
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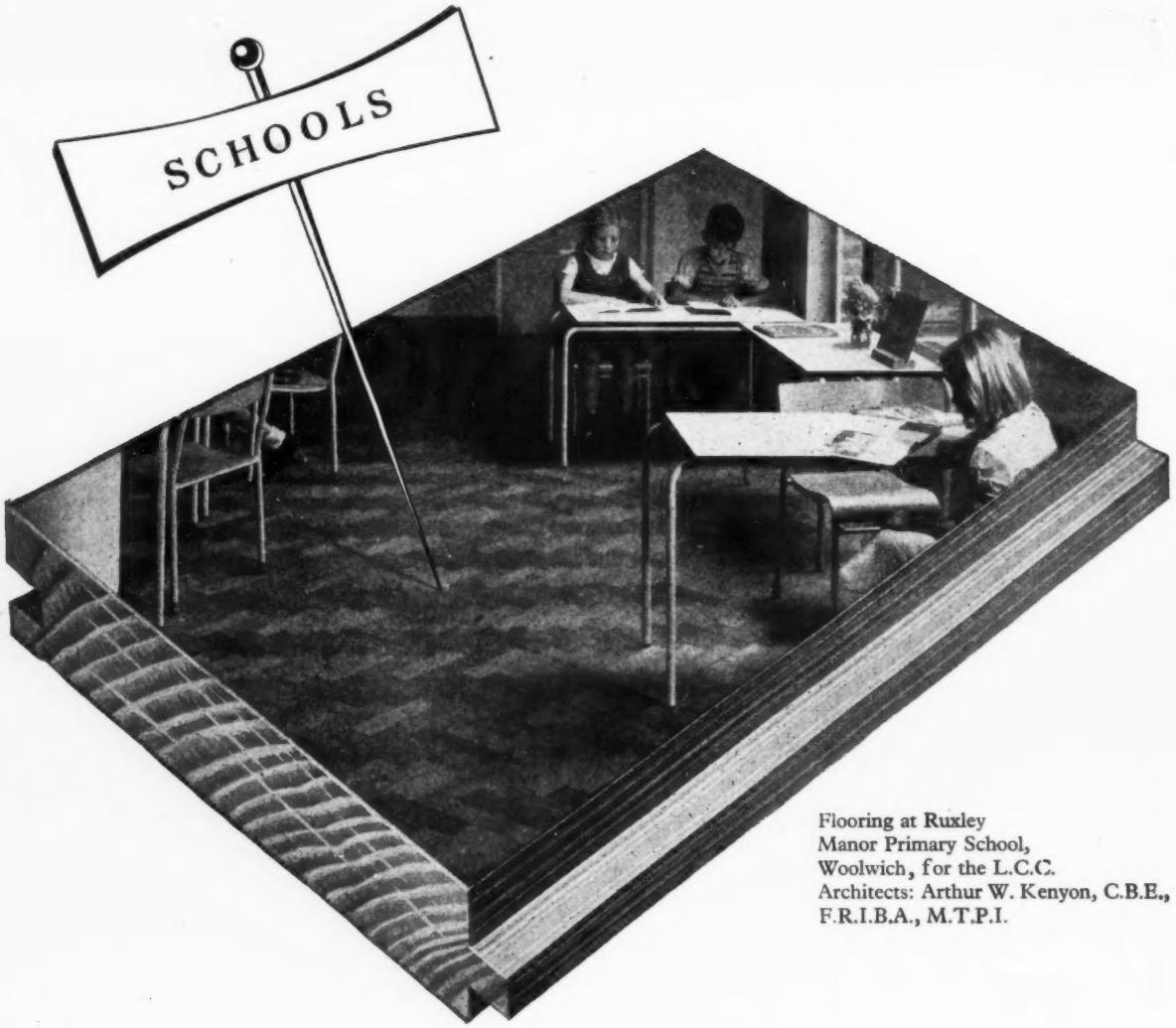
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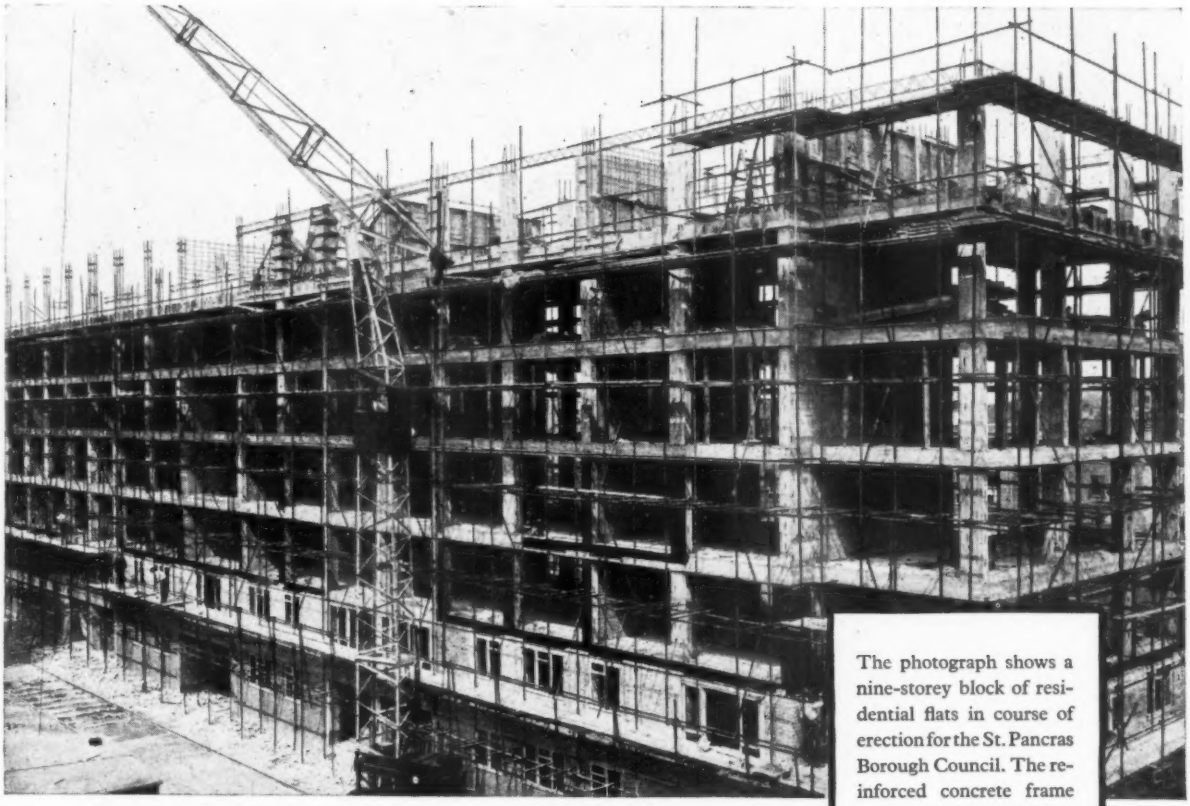
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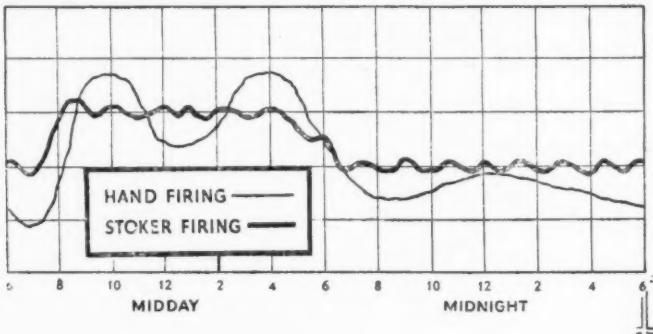
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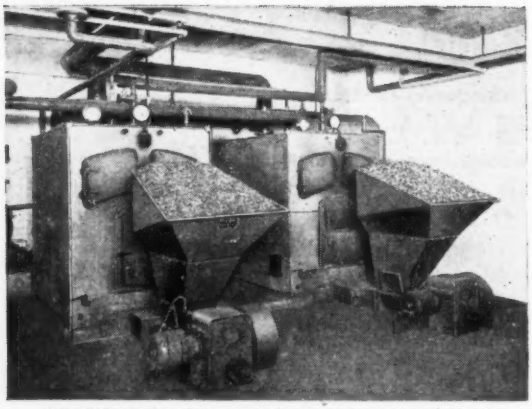
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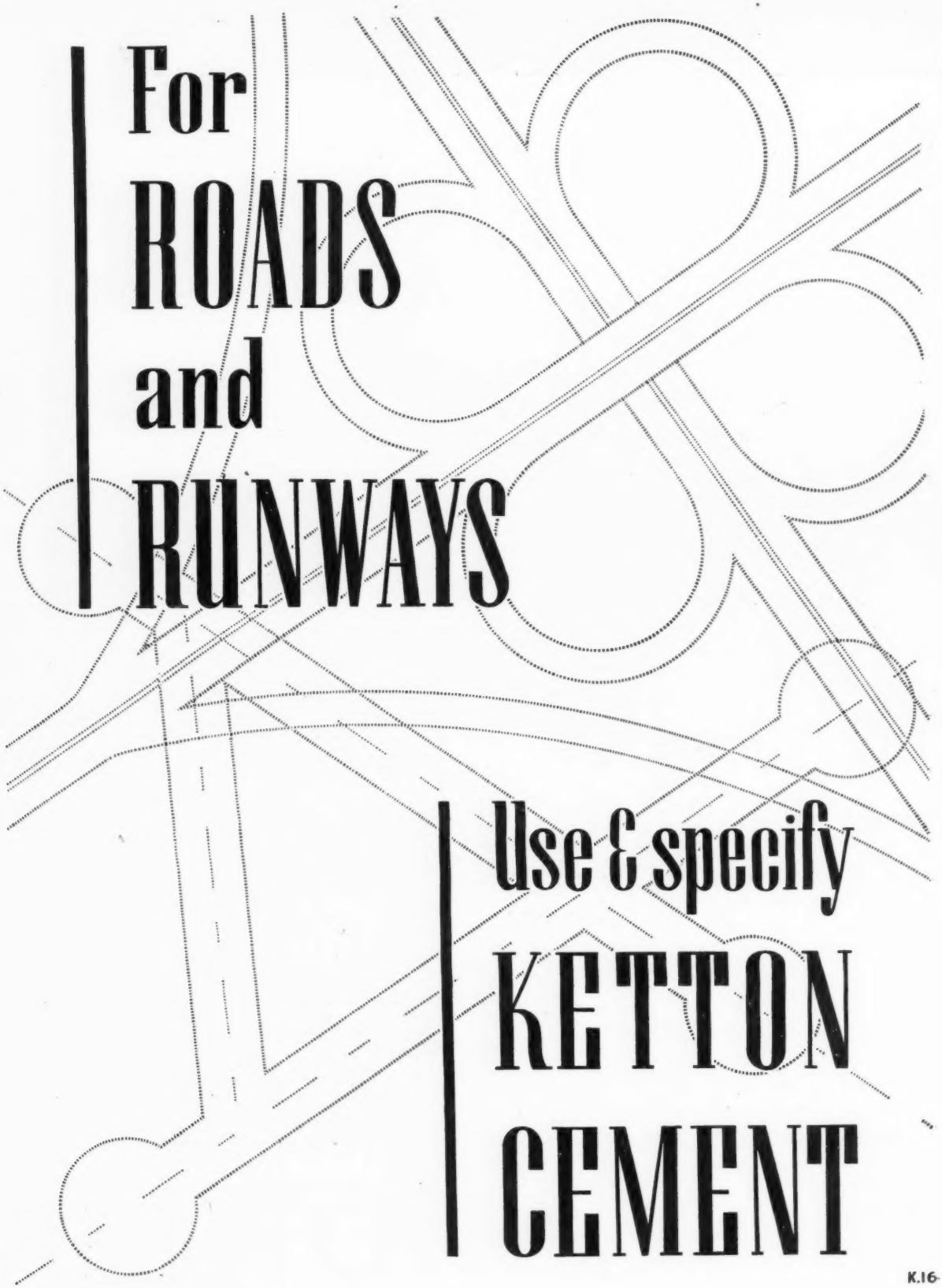
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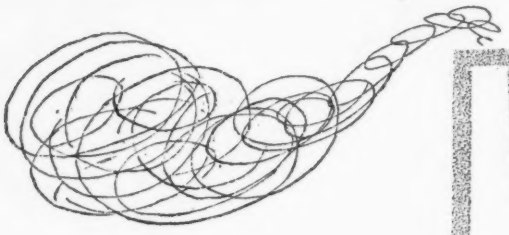

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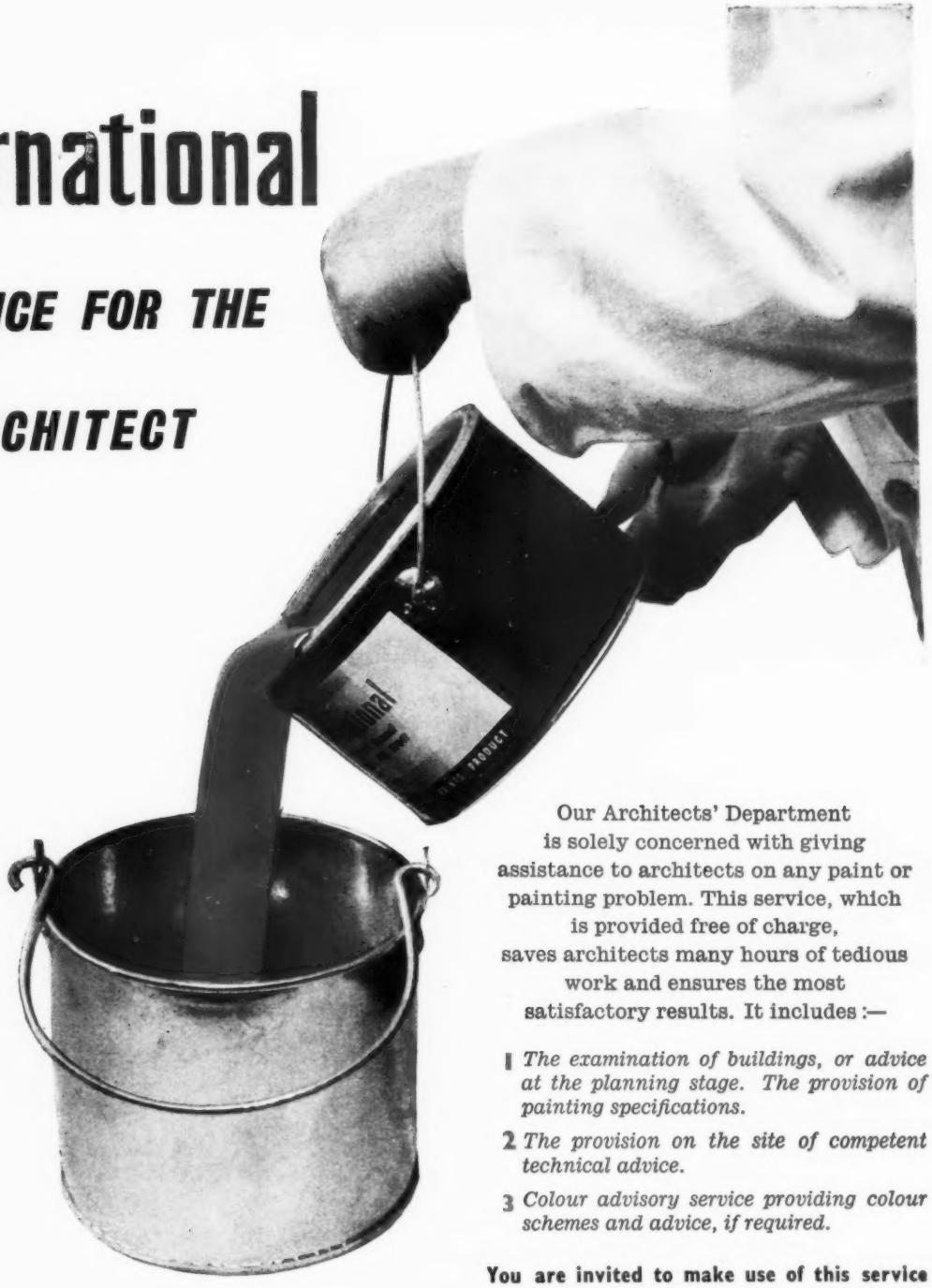
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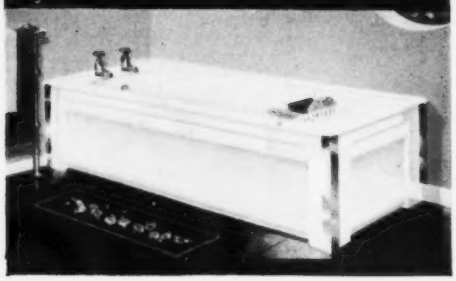
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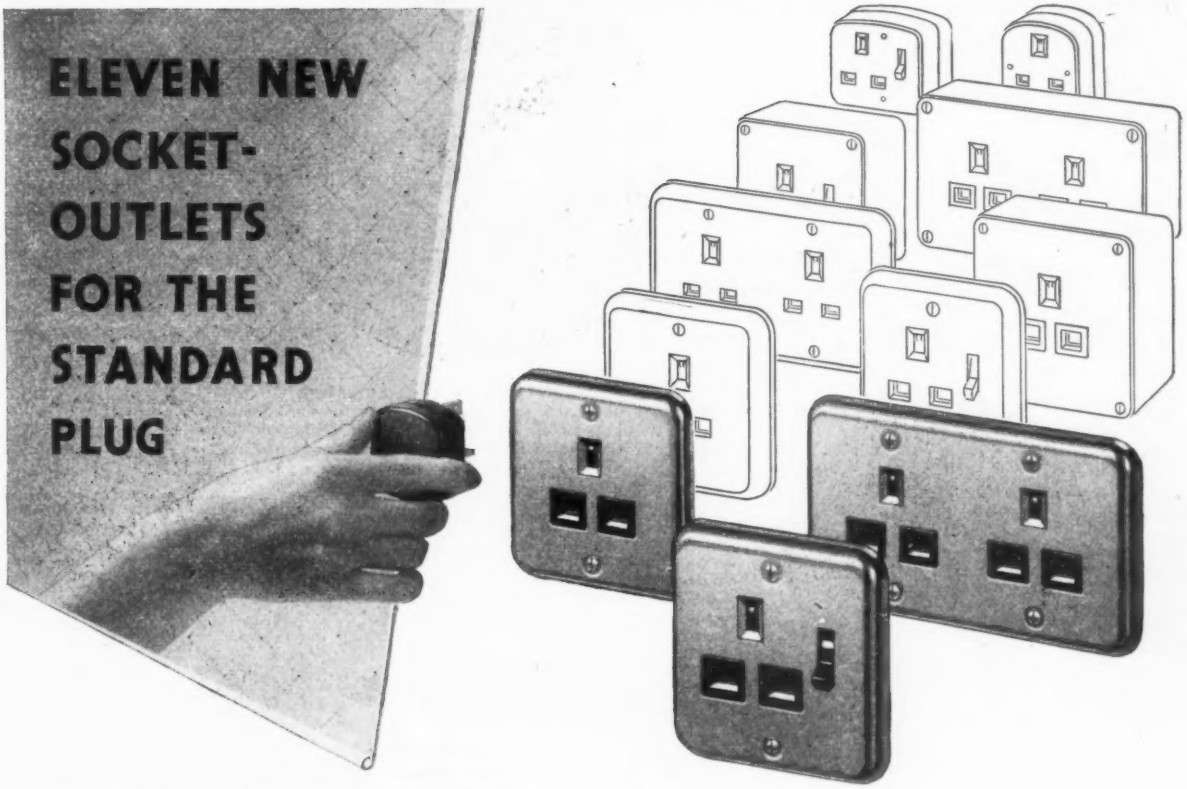
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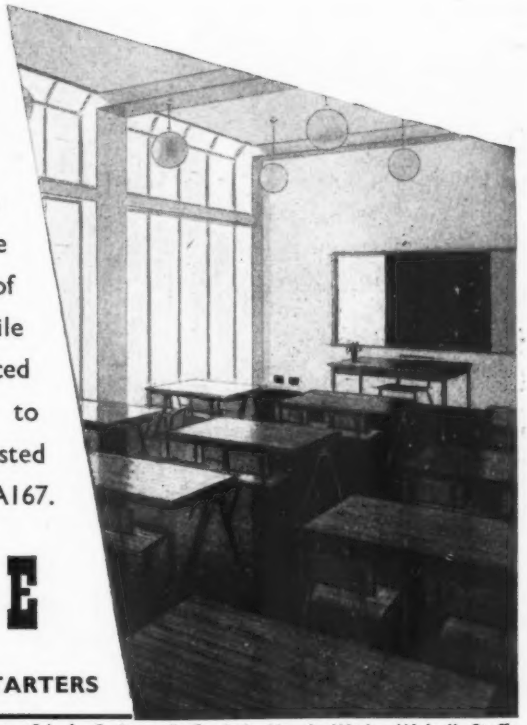
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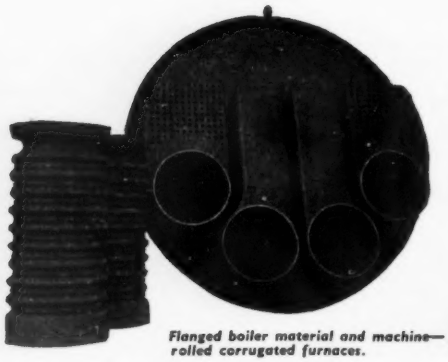
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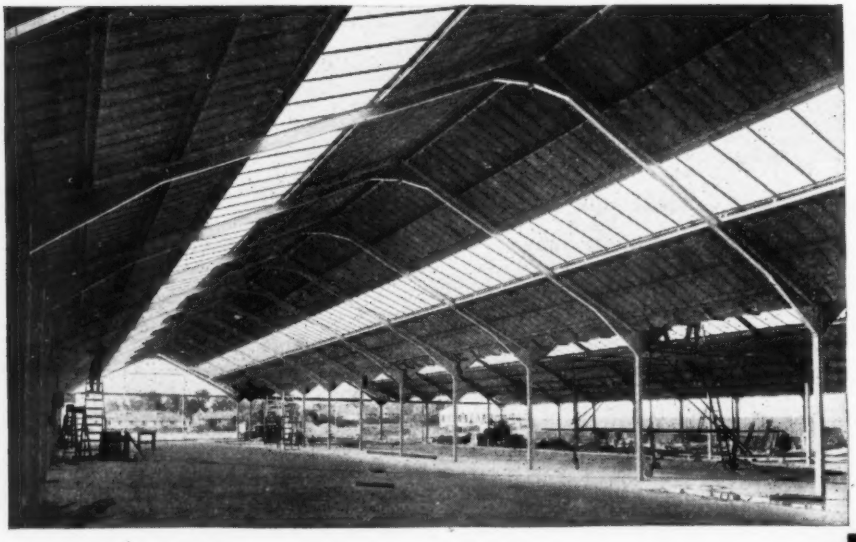


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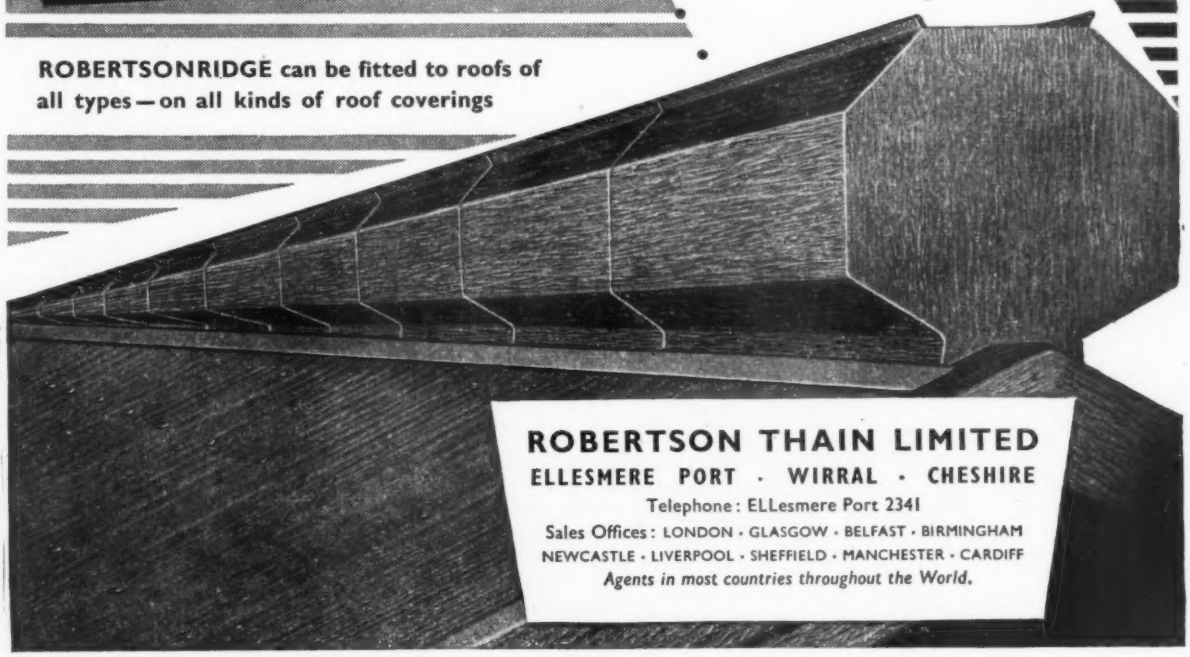
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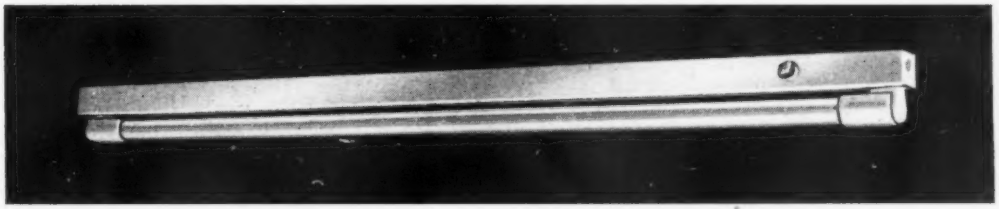
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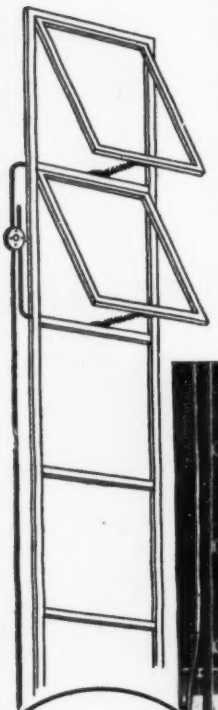
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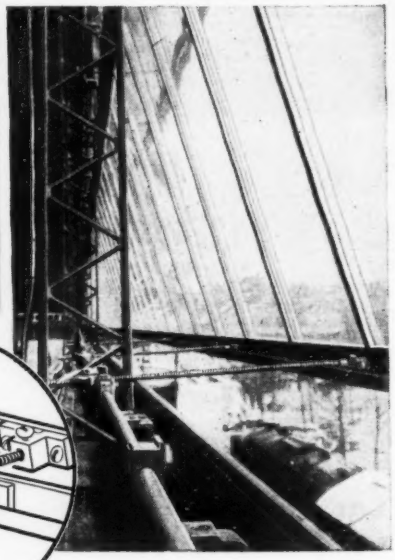
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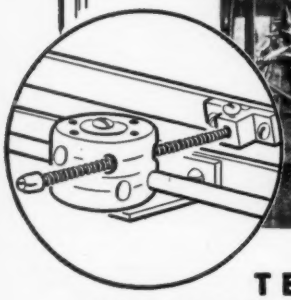


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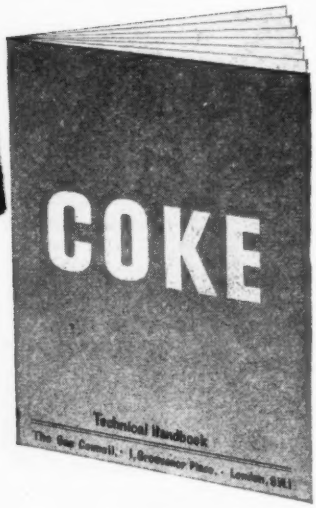
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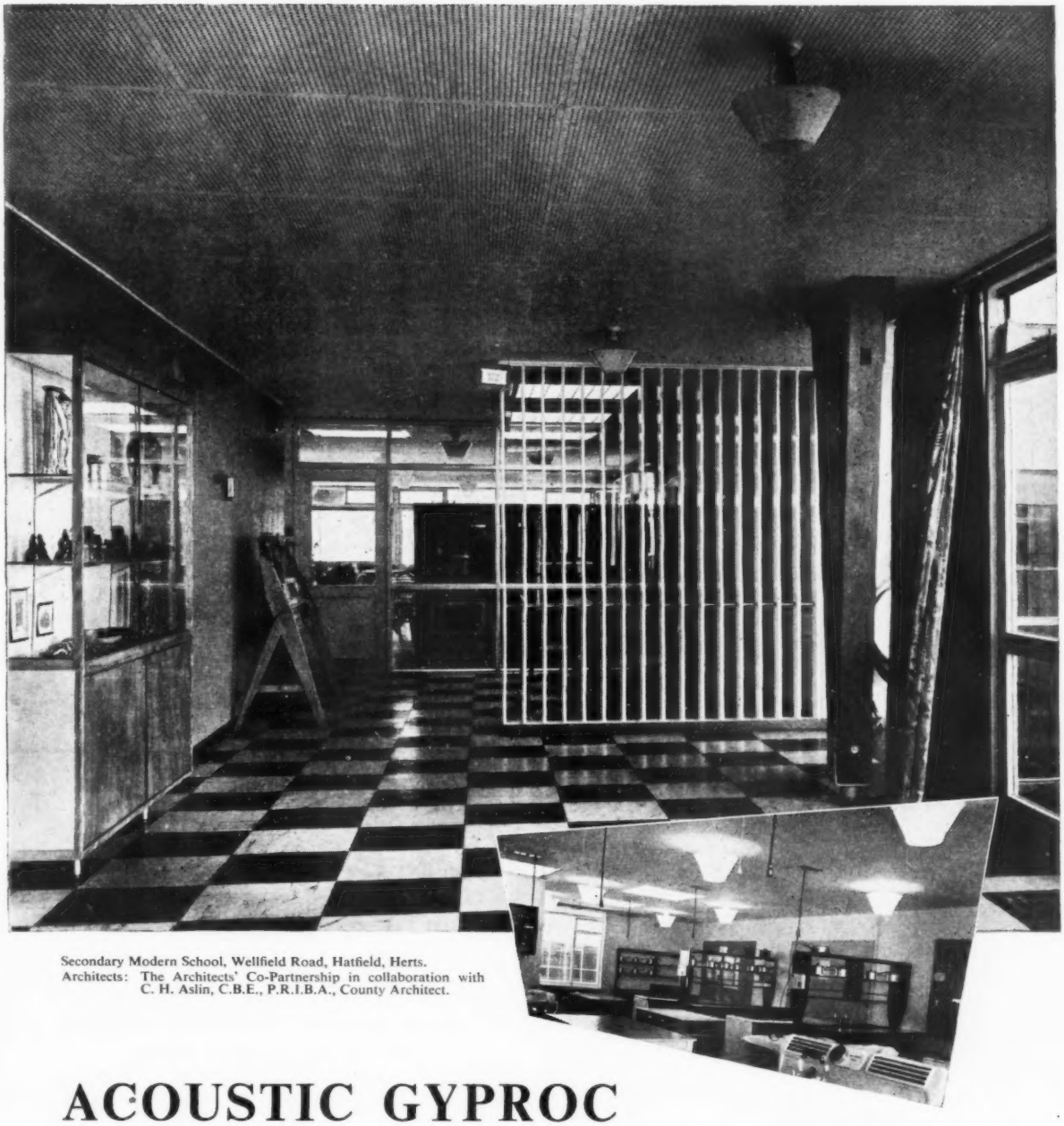
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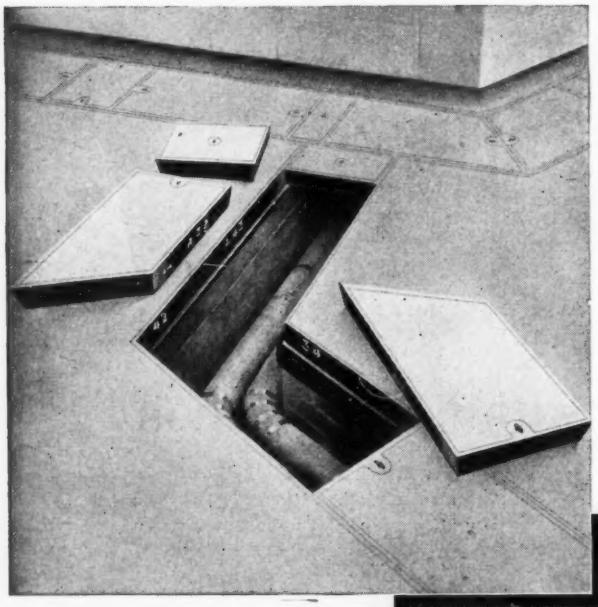
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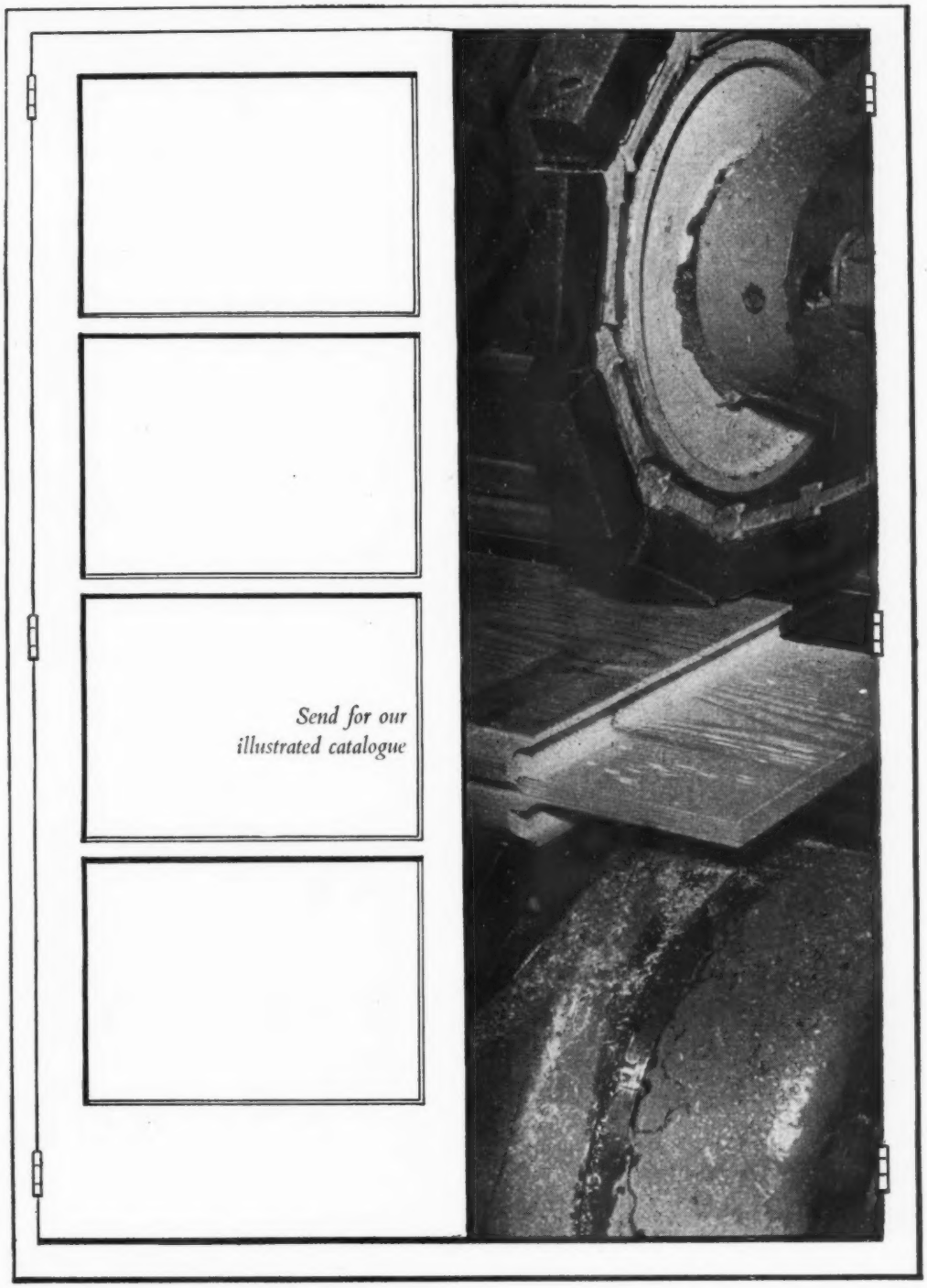
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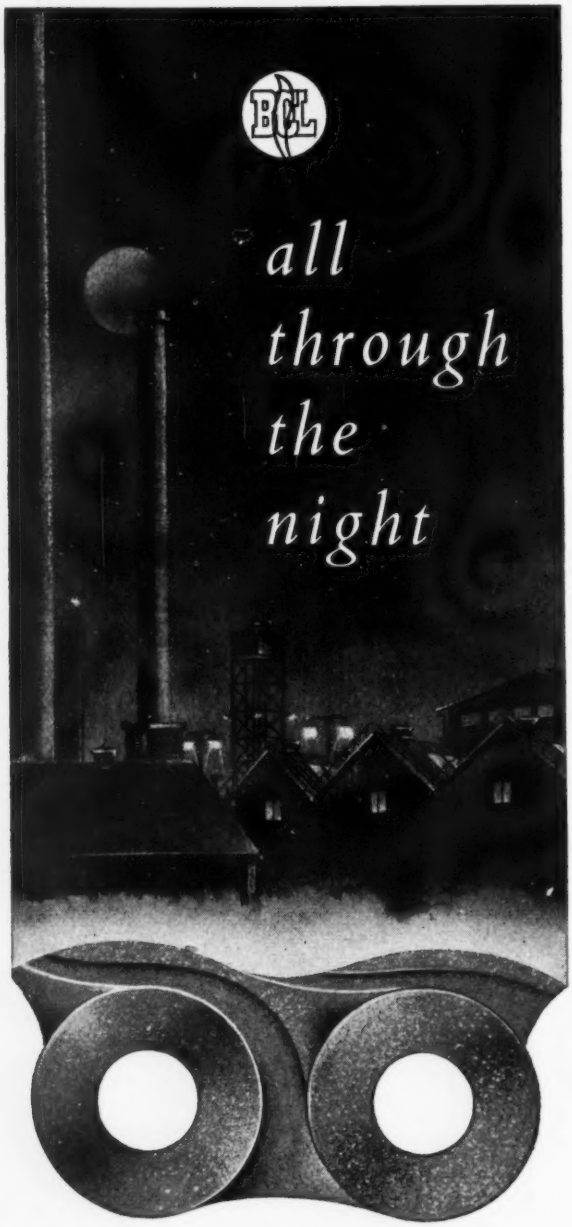
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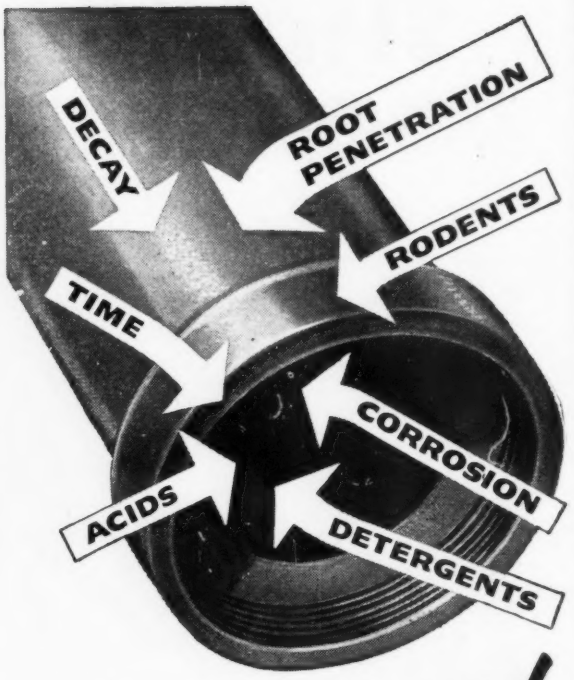
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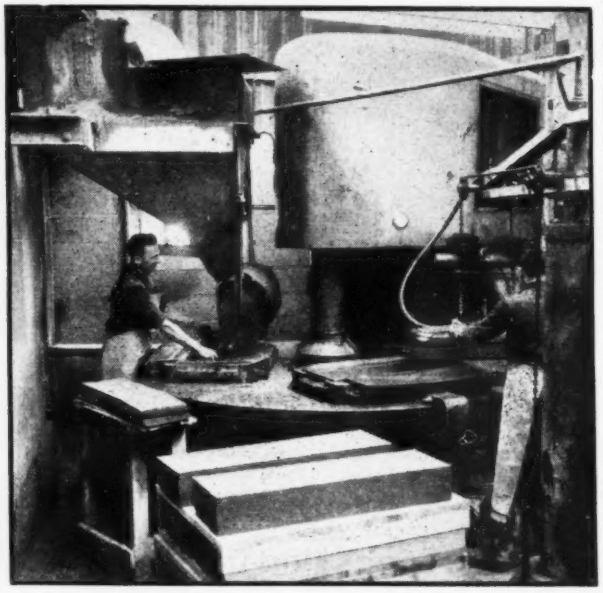
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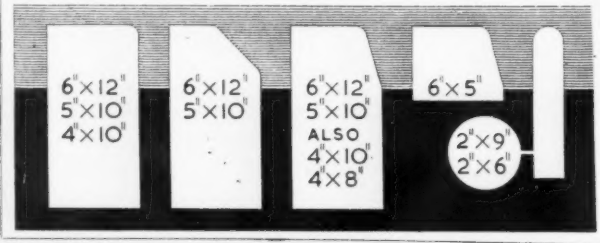
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PUT IT WHERE YOU LIKE

ASTRAGAL has just seen more details of the competition for a "Professional Man's House,"* which was announced in the JOURNAL last week (Sponsors: Tretol Ltd. Assessor: Clifford Culpin. Prizes: (1) £250; (2) £150; (3) £100.) Here they are:—

Site. There *is* no site. Competitors are free to design a house—in urban, suburban or rural surroundings—of any orientation or variation of levels. There are only two limitations: the frontage must be not more than 100 ft. and the cost must not exceed £4,250.

Client. Although the imaginary client is a professional man, he is not expected to work in the house—only to live there. So competitors are expected to plan not for professional needs, but for the domestic requirements of a man who (and here the sponsors tread carefully, so as not to stand on the toes of the rabble) "would be likely, by virtue of his education and background, to appreciate and make proper use of a house that is possibly a little more imaginative in conception than that following the common pattern."

*

"On the other hand," the sponsors add hastily, feeling, perhaps, that they have made their Professional Man too irresponsible, "he would not be expected to want something to be so startling as to be certain of rejection by the Planning Authority."

*

Tretol Ltd. are to be congratulated on running a competition which will be given publicity at the Building Exhibition (where all entries will be displayed) and will thus give publicity (never unwelcome) to the architectural profession. But the profession would take more kindly to the competition if competitors were not given quite so much freedom. How on earth can the assessor be fair when he is choosing between a house on a hill-top, a house on a cliff, a house squeezed into a suburb, a house let loose in a field . . . and so on? Presumably he just decides on the ones he thinks prettiest; in which case a lot of non-winners will have every excuse to be disgruntled. If the size and nature of the site were stated, together with the client's requirements (size of family, etc.), then disappointed entrants would have a chance of seeing why the assessor preferred the winning entries to their own. They would not, perhaps, agree with his verdict, but they would know he was basing his decision on something more solid than "I know what I like."

CLIENT UNDERTAKES TOO MUCH

While we are on the subject of house design, let me tell you about a friend of mine who visited a terrace of rural council houses (among the best of their kind in the country), found that each main bedroom had a trap-door leading to the garage under the bed, and telephoned the architect to congratulate him. It was, said my friend, very thoughtful of the architect to provide such a way of getting cumbersome furniture upstairs.

*

The architect was not amused. He had, apparently, fought hard to save his houses from these trap-doors. But nothing he could say would alter the verdict of the local council, for one of the most forceful members of that council is an undertaker. . . .

*

Or should I have said Cadaver Consultant? You never know, these days, if you are dropping a brick when you refer to a man's job by its good, old-fashioned name. For some time now sanitary inspectors have preferred to be known as sanitarians. And now their professional institute has decided to alter its title. In future you will be expected to refer, not to the Royal Sanitary Institute, but (try rolling this off your tongue), the Royal Society for the Promotion of Health.

WHOLLY ADMIRABLE

It appears that Holy Trinity Church, Marylebone, is to be in part converted to use as offices for the Society for the Promotion of Christian Knowledge. Since Holy Trinity is one of the com-

* See also page 225

CREATION WITH CRAFTSMANSHIP



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missioner's churches designed by Sir John Soane, such a proposal will no doubt arouse unChristian passions in the breasts of many architects. ASTRAGAL, however, finds himself, for once, on the side of the angels in this matter, provided the SPCK shows a worldly understanding of the architectural problems involved.

*

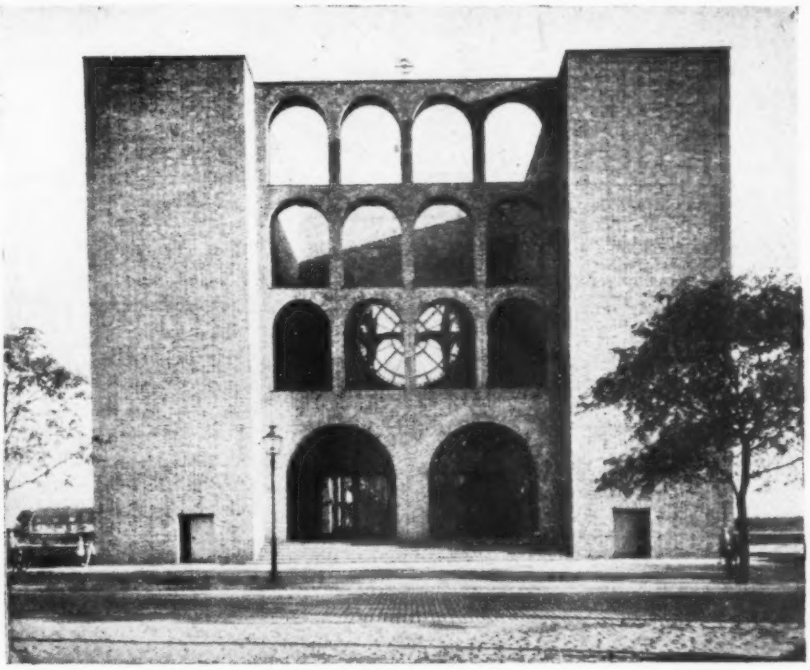
The vocation of the users is clearly most suitable, and the church itself is undistinguished inside. As for the possibilities for such conversion, ASTRAGAL can only point to Nash's chapel of St. John in St. John's Wood (a building whose internal elegance equally raises doubts as to the architect's personal direction). Here the gallery has long been closed off for use as exhibition space and, it is rumoured, even an architect's office. The spatial transformation achieved in fact changes the post-reformation auditorium plan, with its somewhat ordinary character, into a more spectacular, almost processional basilica church. The SPCK should have a look at it. It might dissuade them from being worried into producing an inoffensive and negative scheme.

DOMINIKUS BOHM

The death last week of Dominikus Bohm has robbed Germany—and indeed Europe—of one of its most distinguished church architects. Bohm first sprang to public attention after the 1914 war when he designed a temporary prefab church in wood; he followed this with a concrete one at Ulm which established his position as one of the "new" church-designers, but made him unpopular with the Nazis when they came to power. He came back in the news as a rebuilder of bombed churches after the last war, and in 1953 he won the big international competition for the cathedral at San Salvador.

*

The modernism of his earlier works was later transmogrified into a very restrained version of Romanesque-Revival, as it is usually called, but it seems to have more in common with some of the stripped-to-the-bone arcaded classicism of some pre-War work in Italy, and a better name for it might be Catholic-brick-Classic. At all events it was a serene, dignified style which went a long way toward finding an idiom proper to Twentieth Century Christianity, and ASTRAGAL appends a picture of one of his favourite examples of Bohm's work—St. Joseph's, Hindenburg.



St. Joseph's, Hindenburg, one of the buildings designed by Dominikus Bohm, the distinguished German Church architect, whose death Astragal records on the left.

INCAPABLE OF PLEADING

Just for a moment, before being seized on by more technical minds than mine, a book on professional negligence* lay on my desk. At first I thought that architects were not mentioned, but no, sure enough, near the back, were the sentences liable to make an innocent open-eyed all right. "An architect's liability for professional negligence may arise either through plans, drawings and specifications being defective or incomplete or (my italics) *through their not being supplied to the contractor in proper time.*"

*

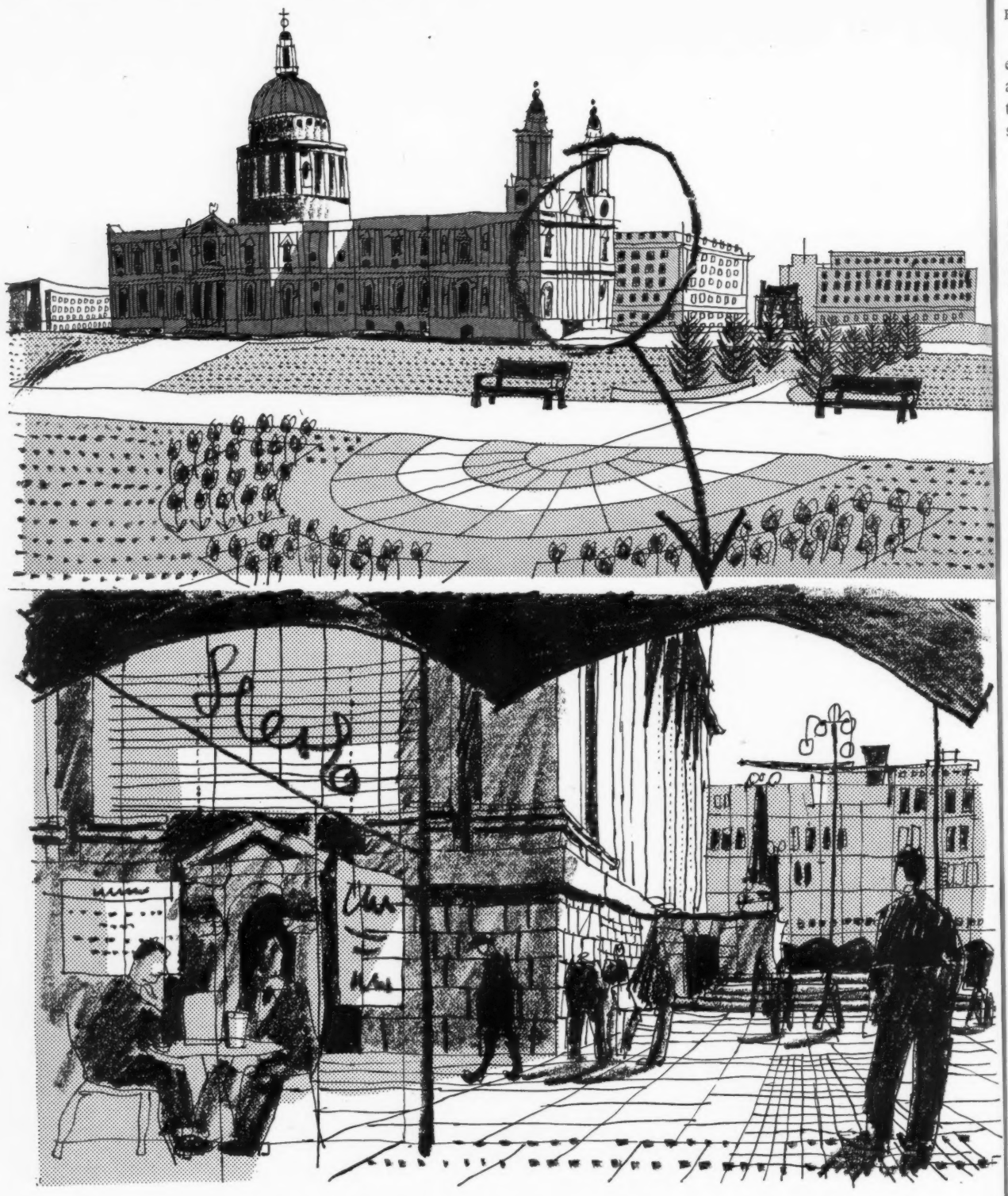
Now why, I asked myself, does this not happen more often? Why all those pleas for co-operation and pre-planning when the rustle of a legal gown would get the boys back on to the drawing board and the tee-squares flashing with much better results than ten conferences and a dozen booklets of builders' blandishments? The answer lay only a few pages away: "The duty of an architect is to use the care and skill of an architect of *ordinary competence*, measured by the professional standards of the time." Again, my italics, but that is the answer: while the majority of us are incompetent we're quite safe . . . so let's have a second crack at that crossword . . .



A caravan that floats. ASTRAGAL *(who has only a little sympathy for caravans, and a great love of boats) while commending the designer's ingenuity, now appeals for someone to design a boat which can be driven along roads, on the grounds that the average motorist would be less shocked by the inevitable unseemliness of the result than the nautical eye by this cruising caravan, crew notwithstanding.*



* By J. P. Eddy, Stevens & Sons. 13s.6d.



Monument or Gravestone

The tide of post-war development in the City is already lapping round St. Paul's Churchyard. The channels into which this tide should flow (the shape, function and character of St. Paul's precinct) must soon be defined. There is no disagreement on the main visual purpose of the precinct, which is to exploit St. Paul's in the life and landscape of London. But there will probably be differences of opinion on how this can best be done. Broadly speaking there appear to be two main opinions. The first is the orthodox, Beaux Arts and narrowly architectural approach of opening up or *Segregating*. The second is the *Integrating* approach whereby St. Paul's is woven into the life and landscape of London by exploiting the dimension of time—the pedestrians' dimension. On pages 211-224 of this issue Gordon Cullen sets out his proposals for the precinct which are based on the principle of Integration.

FUEL FLASH

No doubt, dear reader, you are human enough to greet every world-shattering announcement (*e.g.*, automation, space-trips, parking-meters) with the unspoken thought, " What's in it for me?"

*

If so, your attention will have been caught by the Geneva reports about atomic energy, and you may have noticed that the cost of generating electricity may well be about 0·35 pence per unit in the not-too-distant future. In case you did not find time to work out how much this would put in your pocket for good old-fashioned smoke, you may like to know that the British Electricity Authority's *average* cost is 0·56 pence per unit. This naturally includes a lot of old generating stations, and the best current figure is Portishead, at only 0.37 pence.

*

It seems, then, that electricity delivered to your house is not going to be much cheaper when atomic power is used, though there will, of course, be more coal available for other purposes.

RAILWAY FEVER

As a railway historian O. S. Nock is full of information, but is *not*, fortunately, a whimsical romanticiser, no doubt for the very good reason that he is himself an engineer who is intimately concerned with railway operation. His latest book* starts with the very earliest days of Watt and Trevithick and deals mostly with the early construction years. Even though you may have a vague general knowledge of the work which was done, you can still marvel at the scale of the civil engineering work and the courage of the designers in using cast and wrought iron without any precise calculation methods and even less knowledge of the materials themselves. Nor should one forget the vast earth-moving operations of cuttings and embankments and the careful planning and progress schedules evolved by contractors like Thomas Brassey, who was organizer enough to run a dozen jobs all at once in England, France and Spain and still keep his completion promises. This excellent book has the usual Batsford number of illustrations.

ASTRAGAL

* The Railway Engineers. Batsford. 18s.

POINTS FROM THIS ISSUE

More about the Tretol **competition** pages 205 and 225
Gordon Cullen's proposals for **St. Paul's** precinct .. page 211
Another technical study of **Mayfield School** page 229

The Editors

A SETTING FOR ST. PAUL'S

A UNIQUE opportunity is being missed to provide a truly worthy setting for St. Paul's Cathedral, wrote Duncan Sandys, the Minister of Housing and Local Government, when approving—with modifications—the London County Council's development plan last March. As a result, in April the City's Court of Common Council decided to commission Sir William Holford as an architectural and planning consultant to submit proposals for the treatment of the area around St. Paul's.

Knowing that Sir William Holford's proposals would take some time to prepare, we decided, as an interim measure to keep this subject before the public eye, to publish an article describing some of the more important of the very many plans which have been made for the St. Paul's area. A study of the resulting potted history showed that many planners, in attempting to provide " worthy settings " for St. Paul's, were allowing themselves to be unduly overawed by Wren's masterpiece. In their enthusiasm they were either attempting to sterilize an enormous area around the Cathedral in order to provide an abundance of long distance—and inevitably rather boring—viewpoints. Or they were attempting to frame St. Paul's within a formal cordon of new buildings in a manner quite foreign to English town planning and in a pseudo-classical style of building which so feebly apes Wren's as to detract from it. The lessons which could be learnt from a study of past proposals could so much more readily be expressed in a positive plan, rather than in mere criticism, that, with the cognisance and encouragement of Sir William Holford, we asked Gordon Cullen to put forward the scheme shown on pages 211-224.

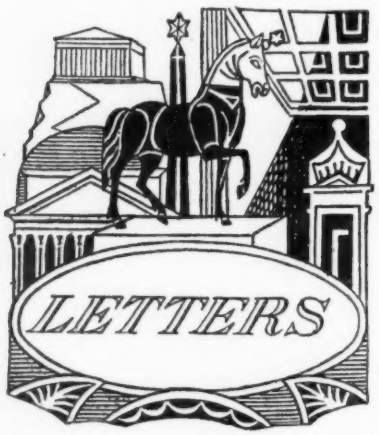
Quite obviously in the short time available to Gordon Cullen he has been unable to attend to every detail. He has, however, attempted to solve the following problems: First: traffic. With the re-routing of the main east-west traffic artery called Route 11, St. Paul's is liable to become the centre of a gigantic traffic jam. The scheme proposes a simple road pattern which will solve traffic problems at present traffic densities. With the probable vast increase in road transport in the not too distant future more radical changes in the city street pattern for east-west traffic will almost certainly become necessary, but such changes must not be allowed to affect the precinct of St. Paul's and must be made elsewhere.

Second: building heights. The scheme ensures that St. Paul's dominates the skyline when seen from the river. It also

ensures that within the cathedral precinct, buildings of domestic scale—that is, not more than 60 ft. high—preserve the scale of the cathedral and are placed to mask tall buildings without the precinct, so as to ensure that, within the enclosure created, the skyline consists only of low precinctual buildings, with St. Paul's dominating over all.

Third: use. In some plans, in order to try and ensure that St. Paul's appears to receive the respect due to it, planners have not hesitated to propose creating colossal areas of open space around the cathedral. When in doubt, they seem to say, clear out, and leave open space for sightseers. Alternatively they design a formal frame of pretentious buildings in outdated styles of doubtful commercial value to modern users. Gordon Cullen shows a number of carefully arranged blocks all of which could be designed to provide good aspect and day-lighting conditions for the occupants. He envisages the buildings being used as offices, flats, a choir school, hotels and cafes, so that St. Paul's is incorporated into the life of the City. But in order to provide a formal discipline, a rhythm, which would define the precinct, he indicates a standard structural framework for most of the buildings within which the different lessees could design individual in-filling panels as they wished.

The informality and subtle variety with which Gordon Cullen provides a setting for St. Paul's is not due to any lack of appreciation of the Cathedral as a formal monument. He has devised a means of embellishing and emphasising its qualities, hiding its faults, and creating an unpretentious backcloth to this great building which is wholly in keeping with the English tradition, and that of the great City within which it stands.



"Student R.I.B.A."
James F. Hampton, A.R.I.B.A.
J. Maxwell Logan, A.R.I.B.A.
Reyner Banham, B.A.
G. L. Thompson, F.R.I.B.A.
"Private Practitioner"

Poaching

SIR,—Having read the repeated complaints of poaching of work by salaried employees from private architects, may I present another viewpoint.

Quite a large percentage of the work thus carried out is for persons who are just able to pay the cost of land, solicitors' fees, furnishings, etc., and who cannot find the extra £150 or £200 necessary in the employment of an architect. The house can be paid for on a mortgage basis after the initial deposit, but I cannot visualize any such arrangement from a private architect.

Apart from this, however, there are the jobs such as the lean-to addition which may even be built by the owner himself. He only requires to get building bye-law approval and not the full services of an architect. Is it reasonable to expect him to add to the costs of what will probably only be a week-end job and to have a specification prepared when he only wants a simple plan.

STUDENT R.I.B.A.

RIBA's Bad Legislation

SIR,—I would like through the courtesy of your journal to augment my letter in your issue of July 21.

We are now all acquainted with the "chaff" published by the council of the RIBA regarding any steps to be taken to amend the Registration Acts.

It is again the stock phrase "the time is not opportune."

I wrote to the secretary enquiring if it is the intention of the Council to publish the facts upon which their decision is based.

The secretary replied that "it is quite impossible to add to the announcement which the Council authorised for publication in the journal."

Members of the RIBA are naturally inclined to ask: Why impossible?

The Bill sponsored by the RIBA, over which there was much controversy at the time—the older members will recollect—has proved a bad Bill, protecting neither the public nor the profession.

In such circumstances, therefore, it should be withdrawn from the Statute Book or amended.

The irony of the situation is that those in the profession who are suffering from the shortcomings of the present bad legislation are mainly members of the RIBA in private practice.

One is inclined to the opinion that the RIBA will not be moved, firstly, because it is believed that the private architect is a dying factor; secondly, half or more of the members are not in private practice and have no interest in amending the Acts.

It seems to me that a much-needed process of reconstruction is vital, to remove the "blinkers" from a great profession and to permit it to retain its leadership. This, however, demands sacrifice.

Would it be a sacrifice to lose the privilege of describing oneself "chartered architect," for the simple "architect"?

The associate class once moved the RIBA and can move that body again, by joining another body, to fight for this very urgent and necessary amendment to the present bad legislation.

JAMES F. HAMPTON.

Kent.

No Boom-Town

SIR,—On browsing through the JOURNAL dated June 30, starting with the vacancies via reading matter to ASTRAGAL, a habit common, I believe, to most assistants, and difficult to break even now the necessity of studying the former is not essential, I noticed that ASTRAGAL had made a geographical change in placing Salisbury, Southern Rhodesia, in our Northern counterpart. It has been raised, in fact, to the position of capital city of the Federation of Rhodesia and Nyasaland. The assertion that it is the capital of Northern Rhodesia could well add fuel to the fire of certain grievances of Northern politicians, but that is of purely local significance.

May I be permitted to make one or two points which I feel should be considered by those underpaid assistants to whom ASTRAGAL was recommending Salisbury as a boom town—presumably as a place of opportunity and riches, and perhaps by inference, the Federation generally.

Truly the post-war development here has been remarkable, especially when considered against the lack of European population which provides the bulk of technical and financial drive. Things are now settling down as elsewhere, to a more steady progressive pattern. With approximately 167 architects to less than a quarter of a million Europeans, giving a higher ratio than in the UK, it is doubtful whether many more could be absorbed from overseas, many newly qualified Rhodesian architects being turned out in South African Universities yearly.

In general, I would add that I think the widely travelled man will know that what may seem an attractive salary advertised for an overseas post may, in fact, bear only the same relationship to cost of living that British salaries do for equivalent posts.

Naturally, there are other considerations which arise but were not commented on by ASTRAGAL, so do not call for my remarks. Let me add, though, that, like myself, there are many others who do not regret uprooting their boards and tee-squares.

J. MAXWELL LOGAN.

Southern Rhodesia.

(more letters on page 225)

ST. PAUL'S CHURCHYARD

GORDON CULLEN DESCRIBES AND ILLUSTRATES HIS PROPOSALS FOR THE REBUILDING OF THE AREA AROUND ST. PAUL'S

There are two aspects in the problem of St. Paul's relationship to its environment. Firstly, how to exploit this monument in the landscape of London. This involves a regional approach (Fig. 1); the consideration of the height and propriety of surrounding buildings. The lack of such consideration is demonstrated in Faraday House. Secondly, how to treat the immediate environment of the building. That is to say, what happens to the actual space between St. Paul's and its nearest surrounding buildings? (Fig. 2). How big should the space be, what shape, function and character? The first problem is the Regional Problem, the second can properly be called the Problem of St. Paul's Precinct. It is with this latter that we shall be dealing although, clearly, the two are at times inseparable.*

To all intents St. Paul's is a large parish church. At Westminster the Abbey Church maintains its cloisters,

* The word Precinct is used throughout the article for the sake of clarity. The final product however should still be called St. Paul's Churchyard.

Fig. 1. The regional aspect of St. Paul's as observed by Canaletto.

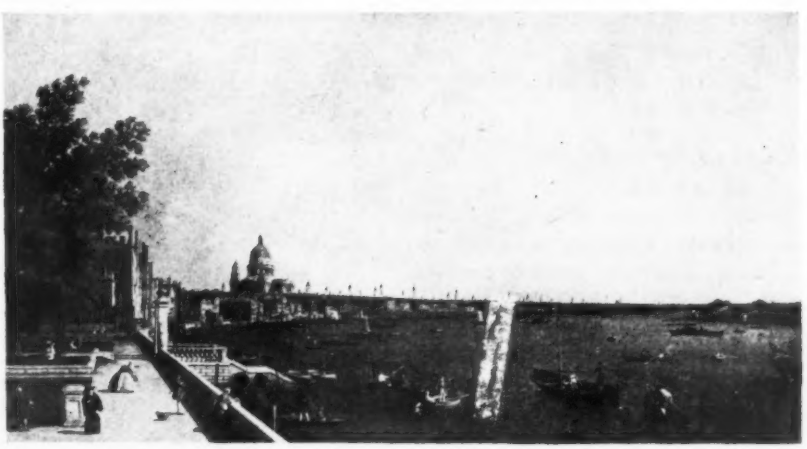


Fig. 2. The Precinctual problem. What happens to the arrowed space between St. Paul's and its nearest neighbours ?

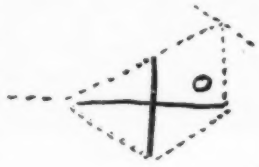


yards, school and gardens, but St. Paul's is simply an enlarged version of St. Mary-le-Strand, a religious traffic island sporting a few square feet of garden. St. Paul's has been like this for a very long time, for as long as we have documentary evidence, and there seems to be no historical or functional reason for us now to revive a mediaeval precinct. True there is a Deanery, a Choir school and a Chapter House but these are, and for centuries have been, merged into the peripheral secular buildings. They are isolated not only from the Cathedral but from each other and have no organic or visual relationship with our Christian monument. Thus isolated from the traditional solution, what remains?

On the following pages we trace the history of the Precinct from the end of mediaeval times, mentioning such schemes as have been made for the area in their chronological context. These will show a pattern, a direction of progress which may be useful in our main purpose which is to put forward proposals for the Precinct.

historical survey

mediaeval. Old St. Paul's (Fig. 3) was a cross on plan (a shape based on symbolism) placed amongst houses and shops. The only space round the building is that supplied by roads which come as close to the building as possible. In fact they join the extremities of the cross with the directness and simplicity that one associates with the actions of children. The houses even extend across these roads and silt up in the re-entrant angles of the building. (Except in the N.E. corner where a space has been left round Paul's Cross for open air preaching.) There is nothing in this arrangement to suggest that it was consciously contrived to achieve any particular visual effect. I suggest that whatever charm we today read into this arrangement comes from our own appreciation of the picturesque and that it might be an over-simplification to assume the same for the mediaeval builders. The whole arrangement seems to be a case of following one's nose.



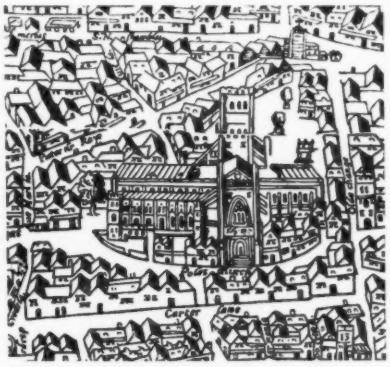
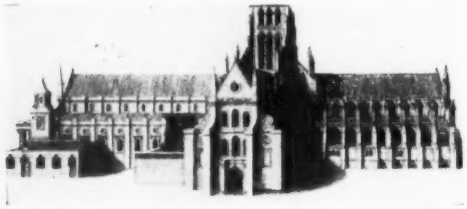


Fig. 3. The St. Paul's area, c. 1560, by Ralph Agas.

pre-fire. Immediately before the Great Fire of 1666 documentary evidence (Figs. 4, 5) seems to indicate a glimmering of the sort of visual awareness current today. Secular buildings crowding into the re-entrant angles have been removed. This suggests that the building was looked at not only for its function but also as a monument worthy to be admired and therefore the clutter of buildings round it was removed. This is a crude manifestation of urban aesthetics but it is a start.



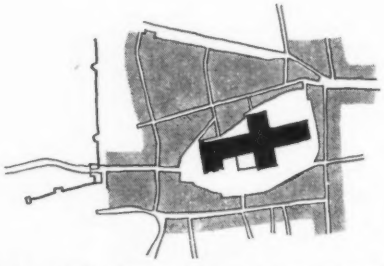


Fig. 4, left, view, and Fig. 5, above, plan of the area immediately before the Great Fire.

1666. The next plan (Fig. 6) shows a design for the Precinct, probably by Leake who sketched his ideas on his survey of the fire damage. It will be realised at a glance that here is a full-blown classical scheme. Once the building is recognised as a noble decoration to the city then the next step is to make it available to the eye. Thus inlooking vistas are planned focusing the eye on the main features of the structure . . . the west front and the tower. Enough free space is provided round the building to allow one to enjoy its presence. This is an important plan in that from this time forward the problem of the Precinct follows either of two main courses. This is the first . . . the fixed viewpoint or vista method. The second, by Wren, is described later on.

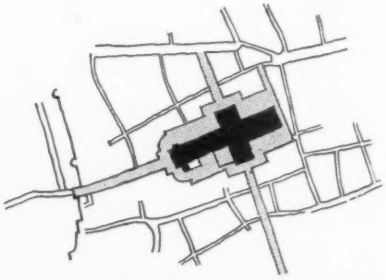


Fig. 6. Leake's scheme sketched on to his fire survey.

1700. By the time Wren made his design for the Precinct it is probable that the area round the cathedral was largely rebuilt. The layout (Fig. 7) remained more or less as it had been in mediaeval times and the only great change was that there was now a relationship between the cathedral and its neighbours in the vertical dimension, in that the average house now ranged with the cornice of the lower order of columns on the cathedral. From the regional view it meant that St. Paul's existed as a *coherent* building above the roof tops (Fig. 1) and from the Precinctual view it meant that there was now a formal relationship between the cathedral and its surrounding buildings.

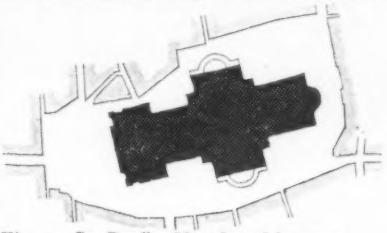


Fig. 7. St. Paul's Churchyard in 1700.

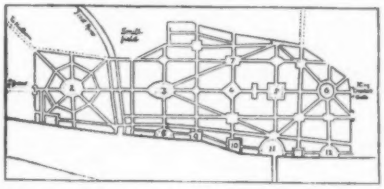
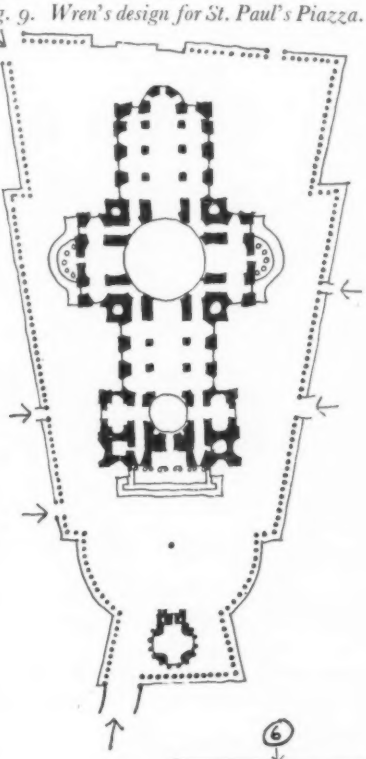


Fig. 8. Evelyn's plan for London.

Fig. 9. Wren's design for St. Paul's Piazza.



Wren (some say Hawksmoor). After the Great Fire of London (as also after the bombing during the war) there were many schemes for the reconstruction of the City including the St. Paul's area. These schemes, that by Evelyn (Fig. 8) may be taken as typical of them, were all based on the fixed viewpoint system of the Italian Renaissance, a web of perspective made significant by such fat spiders as St. Paul's, the Royal Exchange and Mansion House. After the clutter, irregularity and homeliness of mediaeval London this must have seemed a profound revelation. In fact so popular has this system become that today it is synonymous with town planning in the popular mind. Just as Gallilean astronomy had shattered the little cabbage patch mediaeval cosmology so Renaissance planning penetrated and illuminated the mediaeval town. (For spiders read planets.) But just as Gallilean cosmology has suffered a revolution so has Renaissance planning. But as far as St. Paul's is concerned the 300 years between the Great Fire schemes and the post-war schemes have made mighty little difference to the attitude of mind of some planners, as we show later.

Wren himself made such a plan for London. Yet he also produced a plan for St. Paul's Precinct which contains no orthodox vistas at all (Fig. 9). Here is a paradox. I believe there are two explanations.

First, consider Fig. 10. Here the large building is isolated in its environment due to the general anarchy of building heights and also due to the lacerating effect of the traffic stream. In Fig. 11, however, we see how the arrangement of heights and effect of conformity allows the influence, or aura, of the building to spark the gap. It extends out wards and dominates, or colonises, the space which before was dead or neutral.



Fig. 10.



Fig. 11.

This, the extension of the influence of the building, is the first point. Wren created a precinct to extend the aura of the building locally and relied on the aerial dominance of his building to take care of the regional aspect (Fig. 12).

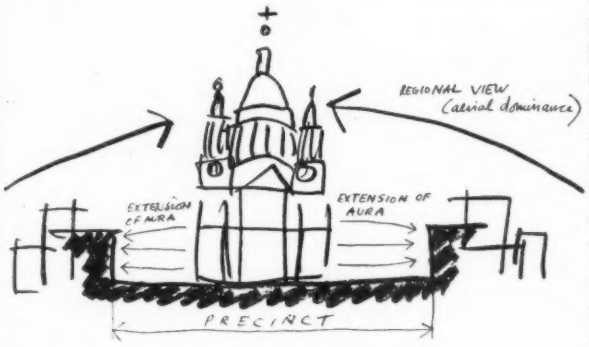


Fig. 12.

The orthodox *vista* layout allows of no such articulation. The KIND of view you have at a distance is the same KIND of view you have close up. Wren's solution meant that from a distance St. Paul's was an object in the landscape while close at hand it ceased to be an object on which you converged but became a space creator. If you imagine the precinct as a balloon of spatial tension created by the relationship between St. Paul's and its neighbours then this is what you converge upon, not the building. And the provision of vistas would be tantamount to pricking the balloon. (See Royal Academy scheme, Fig. 18.)

This leads directly to the second consideration. Considering Wren's plan in more

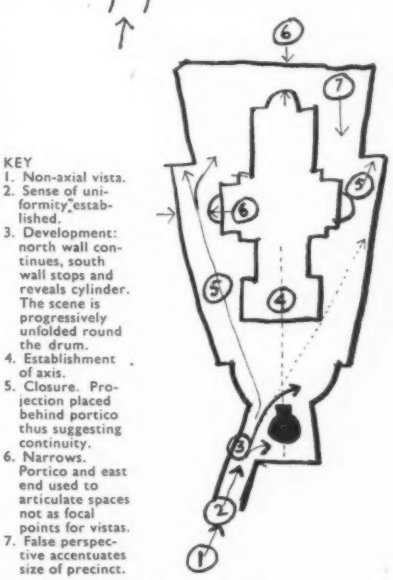


Fig. 13. Wren's plan analysed.

detail it is clear that the full impact of his design can only be achieved in movement through the precinct (*i.e.*, the normal way of using it). There is no ideal fixed viewpoint but instead a series of visual impacts which accumulate into a visual experience in the dimension of time (Fig. 13). In this way the space created by forming a precinct is dramatised and brought to life.

To summarise, Wren adopted the following three courses:

1. He relied on the aerial domination of the building to take care of the regional aspect.
2. He extended the aura of the building locally.
3. He dramatised this space by a sequence of visual impacts.

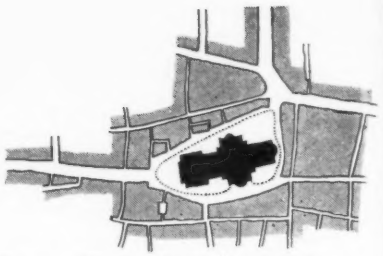


Fig. 14. The St. Paul's area in 1842.

19th century. In spite, however, of all the schemes put forward the area developed according to its own obscure laws (Figs. 14, 15). The ground plan remained mediaeval and St. Paul's remained an integral part of London. This may be regarded as a failure or as a triumph. Certainly it was a failure on the part of planners to get their way with the business man and local authority. On the other hand the London that did materialise had and still has a unique drama in spite of its planners. That is the triumph. The secret of its drama has been set out in the pages of *The Architectural Review* (June, 1945). A city scaled to the pedestrian, a network of precincts, lanes and squares dramatically intermingled with grandeur and openness. And the whole coming to life in movement.

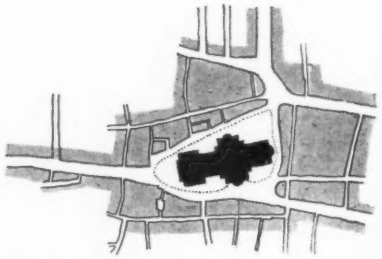


Fig. 15. The St. Paul's area in 1939

Before discussing the post-war schemes I would like to draw attention to what I call the Ripple fallacy:

The Ripple fallacy, or the dangers of opening-up. Reverting again to Wren's plan, consider the plan arrangement in relation to the North Portico (Fig. 16). Here we find that the portico projects out and reduces the space between St. Paul's and the peripheral building. To those of us who still believe wholeheartedly in the Beaux Arts tradition this seems all wrong. " Really, this portico is a most important feature and therefore it should be reflected in the layout. The building line opposite should be modified and opened up, perhaps a vista could be planned." That is the reaction of the Ripple School. Drop a stone into water and ripples extend until stopped (and the planner is a hard man to stop).

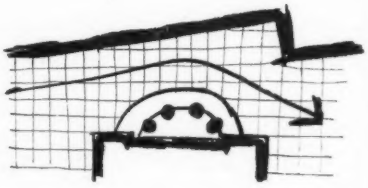


Fig. 16. Wren's plan at the North Portico of St. Paul's.

Yet when you come to consider the situation quietly there are just two things, yourself and the portico. As you walk through the precinct you get closer to the portico, come abreast of it and then leave it. This is normal and includes the excitement normal to the situation, the pleasure of being far away, getting nearer, closing (being intimately THERE, under its shadow and weight, looking up into the concave roof, almost hearing your footsteps echo in it) and then leaving. But if the Ripplemen had their way you would never get near it at all, the path would diverge away on a radius struck in honour of this now all too remote architectural feature. (Fig. 17). The idea being that you get a " good view " of it. What nonsense. The vital quality of compression has been lost and consequently the feature is neutralised.

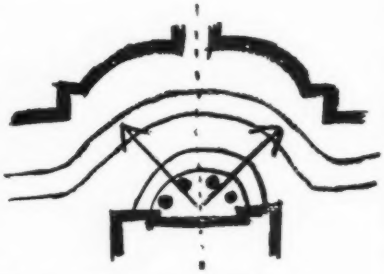


Fig. 17. The Beaux Arts solution.

post war schemes

Royal Academy 1944. The gallant attempt to create a precinct (Fig. 18) has been vitiated by the equally strong attempt to open up the building by vistas. You can't have your cake and eat it.

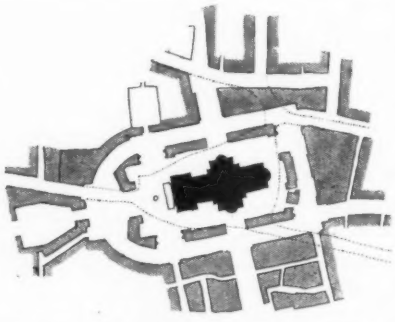


Fig. 18. The Royal Academy Planning Committee's scheme.

Architectural Review 1946. This plan (Fig. 19) is based on the appreciation of the character of the city as a building complex intended to be seen in movement. It is the antithesis of the orthodox, fixed-viewpoint, system. In this fluid landscape intimacy suddenly changes to grandeur, enclosure to openness, and drama to serenity. And in this scene St. Paul's is treated as an incident suddenly materialising to dramatise. There is the south tower seen from far away in Cannon Street—a noble outrider; the east end dominating the proposed linear park between Cheapside and Cannon Street and the dome captured and made personal to the numerous courtyards and lanes that form the traditionally pedestrian and precintual pattern of the city.

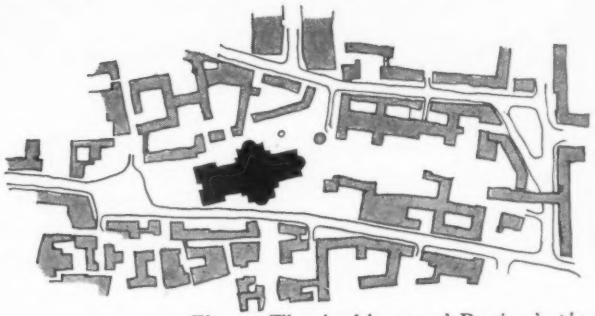


Fig. 19. The Architectural Review's *plan.*

Holden/Holford 1947. In our classification this scheme, (Fig. 20) comes under the heading of opening-up and isolating. It is the " worthy setting " principle which is rather like sending an active but awkward politician to the House of Lords. It differs from the Royal Academy scheme in that it is realistic and lively. It develops the unorthodox oblique vista as well as the axial. The comprehensive height zoning is a thoroughly practical measure to ensure regional dominance. The scheme, however, gives the impression of an ideal vista system having to compromise with anarchic, mediaeval London. Just how far can one impose St. Paul's on London ? The vista from the North Portico reminds one of a cannon ball fired without enough gunpowder. The intractability of London was probably why Wren abandoned the vista system completely and developed the spatial drama sequence which was in fact (and still is) the local as opposed to the imported genius. It is odd to think that 300 years later we are still perplexed by the very same problem.

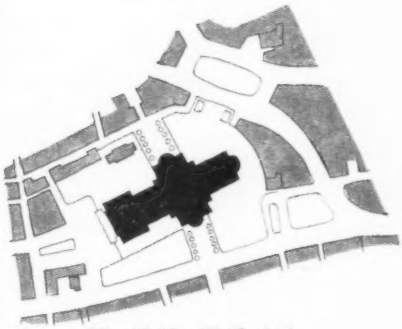


Fig. 20. The Holden-Holford plan.

Polish School 1951. So far we have traced two separate lines of development. The first is based on the simple assumption that a building is, of itself, worthy to be admired. Consequently it is made the focal point of vistas and isolated so that you can see it in one piece. The second line, as exemplified by Wren, is that only through the relationship between buildings are we able to generate the essential quality of drama which is more flattering to our monument than isolation, and without which a town is as dead as mutton.

The Ripplemen are dogged and plagued by the awkward fact that St. Paul's, as it stands, is not improved by opening up. It is a matey two-storey building. Had Wren's second, typically 17th century plan been built, instead of a classical facade to a mediaeval layout, then there would at least have been a case for pastiche Renaissance planning to complete the unity. This proposal, Fig. 21, is the opening-up scheme *par excellence.* The Ripplemen's field day. Putting the Beaux Arts on *pilotis* doesn't fool anyone. The only drama in this scheme would be to compare it to the situation in 1939. If it were possible to have the 1939 layout on Monday, Wednesday and Friday and this scheme on Tuesday, Thursday and Saturday then no doubt we would experience the emotion of astonishment. But the art of town building consists of producing emotions out of the material available here and now. By opening-up you remove the very agents which can do this. Opening-up is a lust, the gratification of which leads to boredom. Of course it has its uses, but it is only one of the many gambits open to the planner.

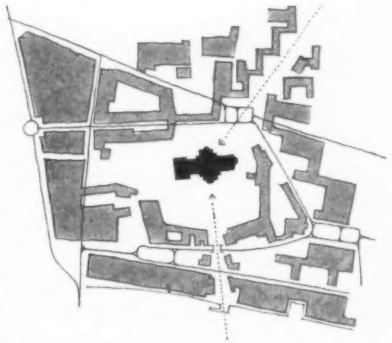


Fig. 21. Project prepared by the staff and students of the Polish University College School of Architecture, London.

comment

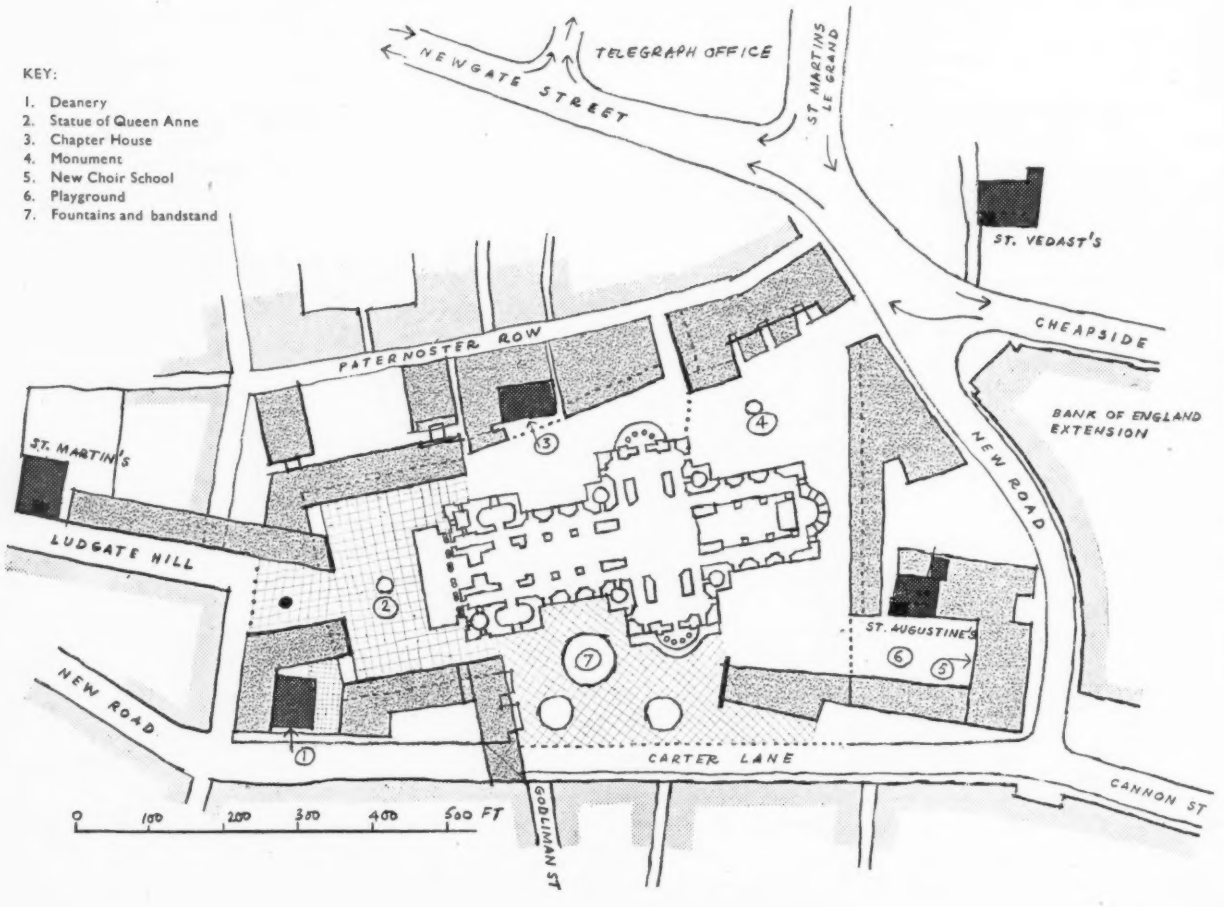
The object is to exploit St. Paul's in the landscape and life of London. Everyone is agreed that it is an asset to be capitalized. There are two opinions on how this can be done. You can either segregate it or integrate it into London. If you open it up and segregate you present the building as a painting to London. If you integrate it you walk into the picture yourself,

you get past the glazing but you take with you the things you need such as shops and offices, pubs and trees and brass bands. And magically you find that St. Paul's becomes a catalyst raising all these ordinary things to its own level. Very roughly this is the dilemma, either you have a remote picture or you use the building to heighten and dramatize work-a-day London. Most of the preceding solutions favour the easel painting approach; The Architectural Review's scheme and London (as it obstinately is today) demonstrate the integrating approach. Wren provides the integrators with a precedent.

I will now let you into a secret. From Westminster, St. Paul's is vast; it towers above all and is omnipresent. But the nearer you get to it the smaller it appears to be. It becomes more delicate and when you finally reach it it is a manageable building. Very well. It is no use applying a Westminster-distance layout to the building for the simple reason that you can't see the layout from Westminster; all you can see is the building. From Westminster nothing could seem big enough or grand enough. But to apply this locally would result in the exposure of a rather shocked and shivering little building in a vast, cold desert. In this article the intention is to do just the opposite; to keep it vast from a distance and to keep its scale big (to keep it radiating and not playing the wallflower) locally. If you go to St. Paul's today you will find that the solution already exists, if imperfectly. From Westminster, from the Embankment, from Fleet Street, the cathedral dominates serenely and when the last screen of building has been penetrated you find that inside the scene is alive. To the immediate north and west of the cathedral where cars are few and apologetic you will find the atmosphere is still personal, people sit on the cathedral steps, conversation carries intimately on the traffic-free air. There is a sense of meandering. Sitting in a pub hard by the cathedral I saw through the open door the great black bases of the pilasters reflected in a window and the presence of the cathedral changed it from an ordinary pub to a special one. St. Paul's, the catalyst, was at work heightening all these simple activities by its presence. And I thought of all the thousands of tulip bulbs waiting in Holland, all the spiky shrubs in the nursery gardens of Surrey waiting to move in when the Ripplemen sterilize the ground and throw us out. The step between a Monument and a Gravestone is desperately small.

proposals

Plan of the author's proposed development of St. Paul's Churchyard.



1

It is proposed that the regional dominance of St. Paul's be safeguarded and increased by the following measures.

(*a*) Restriction of building height. This would be applied selectively, it would not be a blanket restriction. The vital area, that fanning out from St. Paul's to the river would be subject to an absolute restriction as proposed in the Holden/Holford plan. This would not affect a great part of the city and would preserve the view of St. Paul's from Westminster and the Embankment. There would also be similar restrictions within a radius of a quarter of a mile of the building on other sides. Beyond that there would be freedom to develop tall blocks. It is inevitable that St. Paul's will come to share the skyline of London with other tall buildings and I see no great disaster in this provided that they do not, in perspective, coalesce into a wall.

(*b*) Exploiting the building as an object in development schemes. By intelligent forethought it might be possible to exploit the building in new layouts providing it is high on the rebuilding programme. This would prevent a repetition of the disaster of the Bank of England Extension which bottles up the building in the one dimension where it would be most beneficial to extend and dominate, namely along the grain of London's traffic stream (see Fig. 19).

2

Buildings immediately surrounding St. Paul's to be so handled in relation to the cathedral that the space thus created shall clearly belong to the cathedral, thus extending its authority. This indicates some form of enclosure and also uniformity or continuity of treatment. The height of these buildings would be established at about 60 ft. They can be no higher from the regional point of view, yet they can be no lower. For, in order to preserve the clarity and unity of the space enclosed, overlooking by tall buildings outside is undesirable. From within the enclosure created, the skyline must consist only of St. Paul's and the low precinctual buildings surrounding it.

3

St. Paul's to be incorporated into the life of the city and not isolated from it. To implement this the following proposals are made.

(*a*) The space created by the extension of the influence of St. Paul's to be regarded as a precinct and *the function of the precinct to be multiple.* Thus the widest scope is given to its use by citizens and tourists. The buildings forming the precinct would be devoted to religious buildings, shops, offices, hotels, chambers, cafes and museums, whilst the spaces enclosed would be suited to formal and informal occasions: the procession, the military band, the quiet oasis and the playground.

In order to establish the fact of the precinct there would be a rhythm and family resemblance between the buildings. This could be achieved by a continuity of arcading, and by a standard structural framework above into which different lessees could fit their own accommodation as they thought fit. Consider Fig. 23. At point A, for example, if the eye can pick up a unity of rhythm between elevations B, C, D, and E, then the effect of spaciousness is increased. Were the buildings to be completely different or just neutral then there would be no visual link and the size, extent, authority, circumambience (call it what you will) of the precinct would be lost. Bear in mind that the whole precinct is very small. On a bus you could pass it in 30 seconds. It needs to be a clear statement.

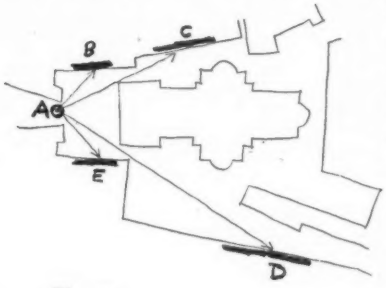


Fig. 23.

(*b*) In order that the precinct may operate freely *it is proposed to make it a pedestrian precinct.* This will necessitate the re-routing of the traffic stream running from Ludgate Hill through St. Paul's Churchyard to Cannon Street, Fig. 24.

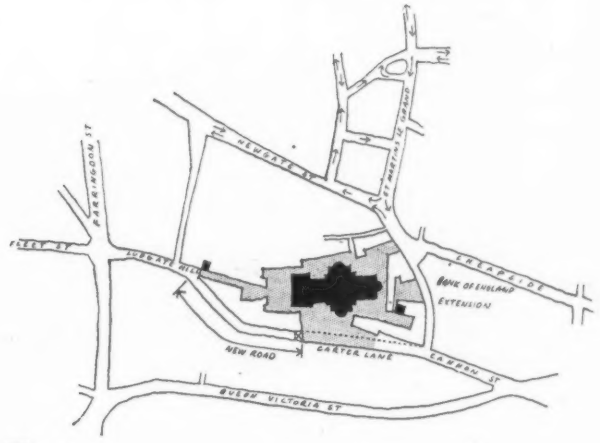


Fig. 24.

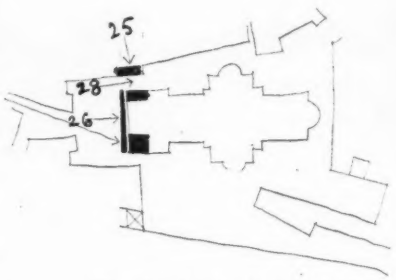
This will be effected by diverting the traffic route south from Ludgate Hill at a point near St. Martin's to link up with a widened Carter Lane (which would form the southern wall of the precinct) and thence to Cannon Street. To the north-east of the precinct the traffic problem is in no way acute, or at least its problems do not encroach on the precinct. The main artery of Cheapside, Newgate Street, Holborn Viaduct remains as it stands. The proposed new road of the Holden/Holford plan which joins the Cheapside/St. Martin's le Grand intersection with Cannon Street (on the line of which the Bank of England Extension is rising) does not seem to warrant the construction of roundabouts and could be controlled with traffic lights. The projected Route 11 would feed into Newgate Street and Cheapside via a system of one-way streets round the Post Office buildings.

(*c*) *The fixed viewpoint system is rejected in favour of the serial* (*developing and exploiting*) *system.* The first assumes the beholder to be outside the picture, looking at a painting, whereas the second comes to life as one moves through it. It is the difference between a lantern slide lecture and the cinema. The first avoids the issue of time whereas the second exploits it by creating a fluid landscape which fluctuates dramatically as one moves through it. Thus St. Paul's is integrated into the landscape and not isolated.

a tour through the precinct

We have left behind us the building as a piece of sculpture in the landscape, the regional view. Its new function is that of precinct creator or builder. The building in this sense "comes to pieces," its several parts and qualities are exploited in detail. Thus, when approaching the building along Ludgate Hill, it is possible to utilise the south tower as an obelisk or focal point. As an outrider it has greater merit and purpose than the complete west front.

In parentheses, the pedestrians' entry to the precinct (*Figs. 25 and 25a*) *is not confined to roads and passages. The precinctual buildings would, in many cases, be arcaded and open underneath so that there would be a continuity of floor surface between the inside and*



Key showing viewpoints of Figs. 25, 26 and 28.

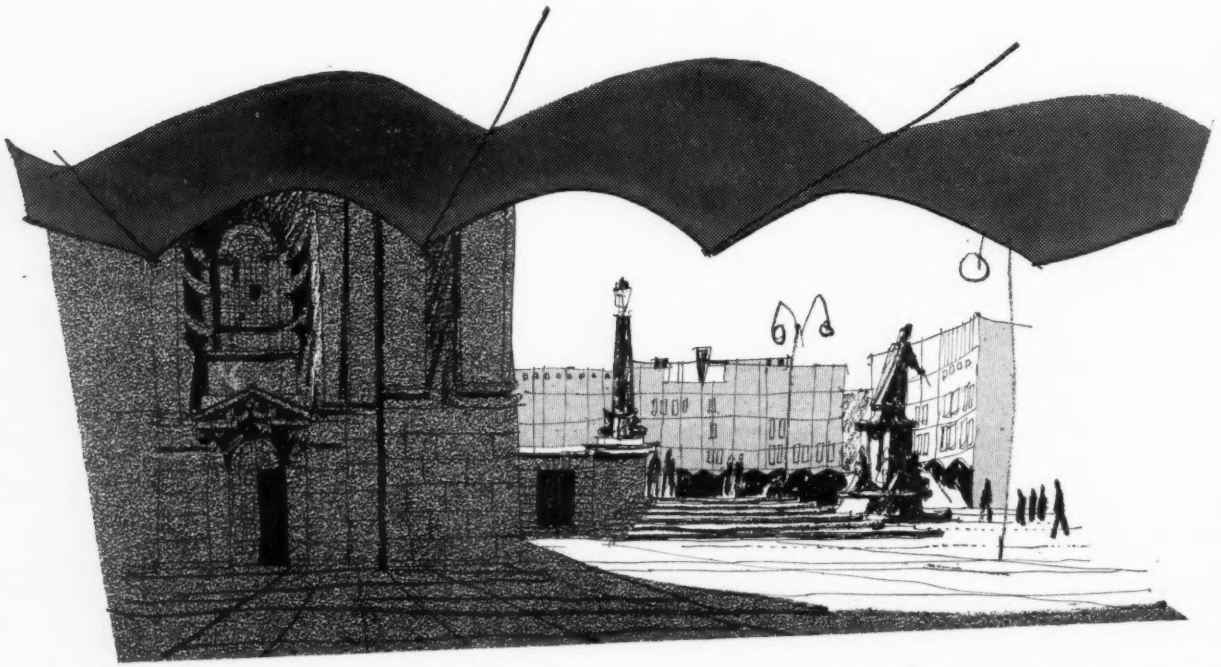


Fig. 25. The foot of the North Tower and the formal square at the West Front seen from an arcaded pedestrians' entry to the precinct.

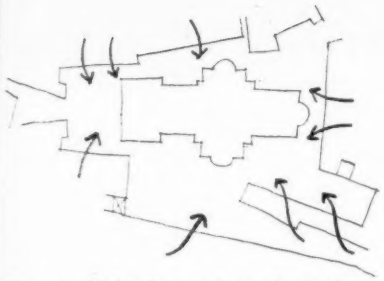


Fig. 25a. Pedestrian entries to the precinct.

the outside of the precinct. Thus the pedestrian is able to filter in and out at many places. Not only does this integrate the precinct with the City, but it also provides a series of powerful undercroft vistas due to the sharp juxtaposition of normal and monumental scale (i.e., one of the qualities of the building—its scale—is detached from its context and exploited). This is also the "snapshot" technique whereby the framing of a mixture of elements turns them into a picture. Reverting to the Ludgate Hill approach, first contact with the precinct establishes a re-orientation of axes (Fig. 26). The old axis of Ludgate Hill, which the traveller accepts as the London axis, gives place to the particular axis of the precinct,

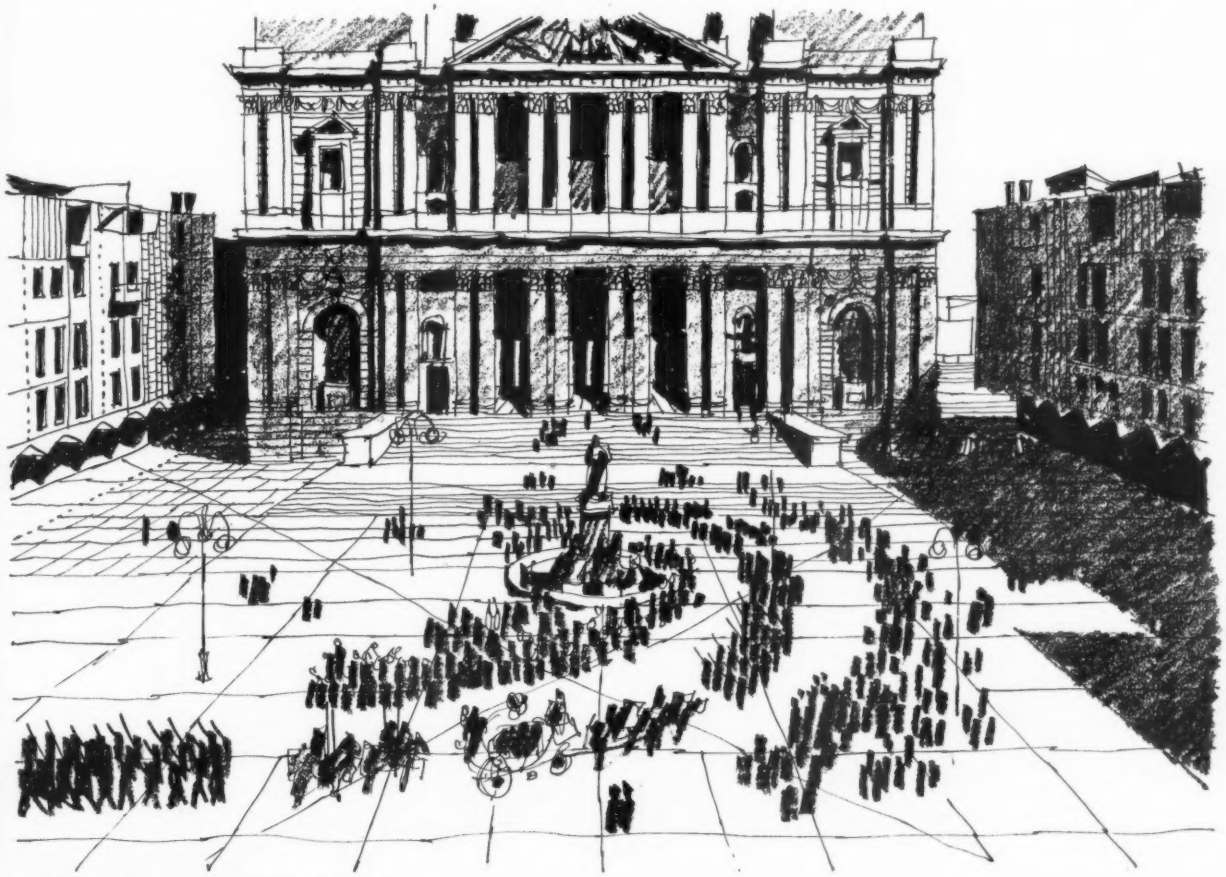


Fig. 26. The formal square before the west front.

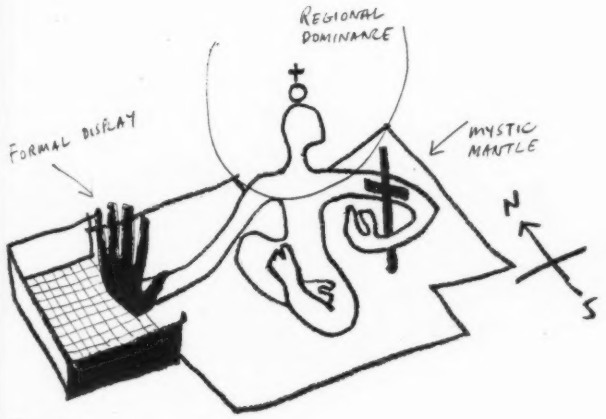


Fig. 27

thus articulating and heightening its exclusiveness. The necessary space needed for marshalling processions and crowds is disposed in a way likely to achieve this re-orientation. It is symmetrical. In this formal square the West front of St. Paul's is, so to speak, detached from the parent structure and becomes a two dimensional backdrop or display for the formal aspect of religion (Fig. 27). (Bear in mind that by opening up the building none of these effects is possible.)

There are two exits from the square, one on either side of the west front. Taking, as part of this pictorial tour, the northern exit (Fig. 28) it is found to be pinched in order to differentiate between the formal square and the space beyond. Since they have different functions and a different visual purpose the transition from one to the other should be precise in order to extract the full value of contrast.

The square is enclosed and static whilst the space beyond (Fig. 29) is linear and directional —St. Paul's seen in enfilade. The north flank of the building is best seen in enfilade—not against the sun; and the provision of shops and cafes in this space, where they are likely to catch the sun, forms a busy and bright foil to the solemn shaded building. Into this space projects the north portico, a dominating incident in the scene. The plan attempts to draw it into the busy and matter-of-fact life of London, not to isolate and sterilize it. The space is defined (made visually digestible) by the building which projects out behind the portico.



Fig. 28. Leaving the formal square: narrows.



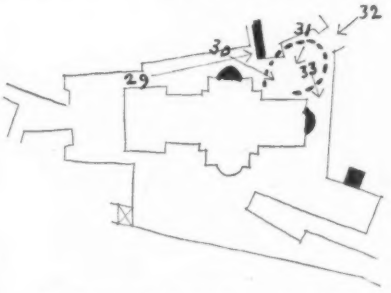
Fig. 29. Passing through the narrows. A different, coherent scene is revealed.



Fig. 30. The North Portico acts as a pivot between the busy shopping space and the quiet tree-space.

It makes the space coherent (closure) but movement is implicit (Fig. 30) and the portico acts as a pivot to disclose an entirely different scene. Here we are at the east end of the Cathedral, what we see of St. Paul's is the visible mantle of the altar. The mystic aspect of religion (refer back to Fig. 27).

The tree-space (Fig. 31) is quiet and reflective. This conforms to present day use. The existing trees should be kept and augmented to complete the green oasis through which the structural enclosure is seen veiled. Concerning these trees, the point has already been made in The Architectural Review *that seen from Cheapside the gap connecting it to St. Paul's Churchyard is filled with foliage (Fig. 32). This is paradoxical since it would seem*



Key to viewpoints 29, 30, 31, 32, 33.



Fig. 31. The tree-space at the north-east of St. Paul's is given its own individuality by the central column.



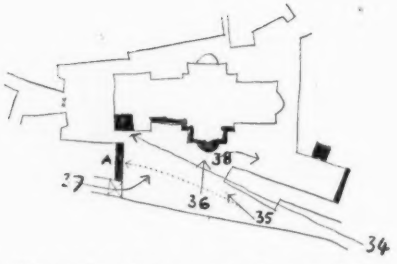
Fig. 32.

correct to use the gap in order to see the building beyond. Yet the effect of withholding the view until one has passed through the trees is one of great drama since the close-up of the towering walls is revealed suddenly. (Serial vision as opposed to fixed viewpoint vision). The last view in this sequence is of the East End (Fig. 33); the surrounding precinct being holed to express the airy and lyrical quality of this feature and to expose to London the best view of St. Paul's. (Now unhappily in the course of being effectively blocked by the new Bank of England building.)

Approaching the precinct from the east along Cannon Street (Fig. 34) the south tower again stands out as a marker. This is the main east-west traffic route running along the line of Carter Lane and we are approaching what may be termed the "popular" subdivision of the precinct. Here the precinct stretches to its widest and St.



Fig. 33. *The treatment around the East End showing a gap in the precinctual buildings.*



Key to viewpoints 34, 35, 36, 37 and 38.

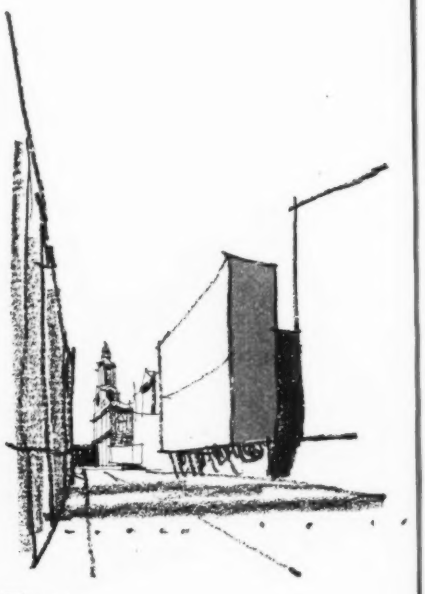


Fig. 34.



Fig. 35. At close range the precinct, a wide, sunny and colourful space is revealed and articulated by the building, A.

Paul's faces the sun. The block of buildings (A) (Fig. 35) extends across our road thus defining and making the precinct coherent. Coming abreast of the building (Fig. 36) we find a scene full of light and colour and vitality; fountains and bands playing. The somewhat awkward elevation of St. Paul's at this point being used for its richness of texture and colour as a foil to the jets of water and vivid colours at ground level. Traffic travelling east from Fleet Street would be switched to avoid the precinct at some point before St. Martin's, Ludgate and diverted to the south to link with the enlarged Carter Lane. Such travellers would observe the Cathedral along Fleet Street, and, within an ace of the building, be diverted and lose it completely only to have it suddenly and dramatically revealed here. This large space is "opening-up" which, as I said previously, has its uses. It is useful here where the scale and



Fig. 36. The sunlit South Portico forms one of the many colourful incidents in the "popular" subdivision of the precint.

speed of traffic (so different from the pedestrians) demands this kind of punch (Fig. 37). And it is right that the building should be seen by the travelling public (incidentally adding to the colour and movement of the " popular " subdivision of the precinct).

But finally we turn to the right (Fig. 38), past the South Portico, and are at once in the tranquillity and spaciousness of the East End. St. Augustine's (back again amongst buildings) dominates a further space which might well be the playgound for the Choir School. In this short tour we have seen how the character of the precinct could fluctuate from formal to informal, from quietness and ranquillity to bustle and brilliance, thus investing the structural enclosure with variety and vitality. And also how the structural enclosure itself seeks to lead the citizen onward by arousing his interest, his sense of anticipation, by the devices of compression and release and the sense of coherency. And how all these effects are heightened and translated by the presence of St. Paul's.



Fig. 37. The comprehensive view of St. Paul's as it is today.

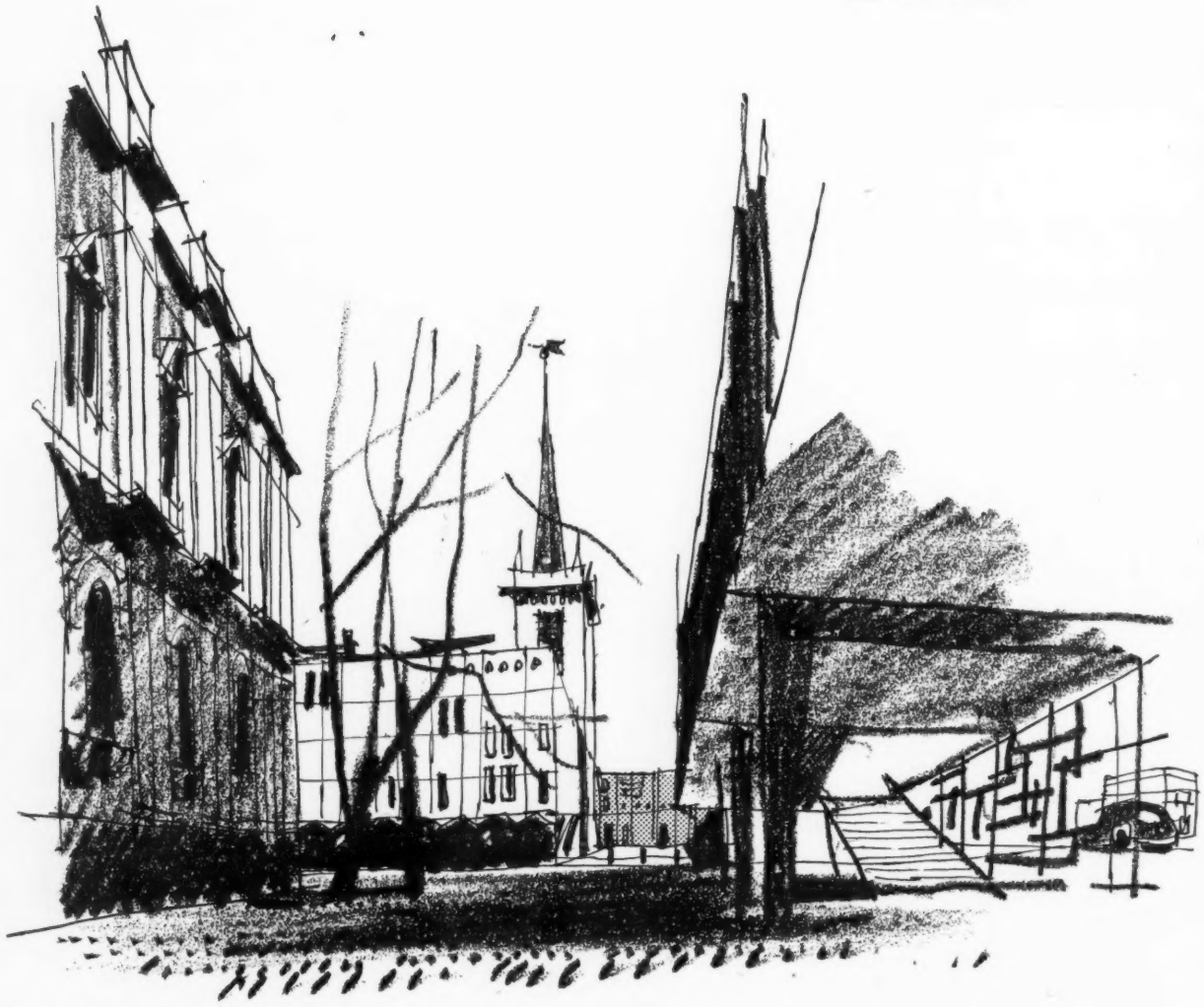


Fig. 38. Looking east from near the South Portico towards St. Augustine's.

Letters—*continued from page* 209

Cybernetics

SIR,—In last week's issue of the AJ, ASTRAGAL announced that (I quote) "Cybernetics, as readers will of course know, is the study of dynamic sound." One reader, at least, has to admit that this news came as a considerable surprise, having been led, over the past four or five years, to believe that Cybernetics was the study of control mechanisms, which is what Professor Norbert Wiener, the inventor of the word, has always *said* that it meant. Since cybernetics is the basic discipline of Automation, this last must, in reality, therefore, be the study of the labels on gramophone records, which would account for the widespread public interest in the subject, since no-one is interested in what goes on in factories, which is what one had erroneously assumed automation to be about.

But what the heck is dynamic sound anyway?

REYNER BANHAM.

London.

Patrons Once Removed

SIR,—Your leading article, "Patrons Once Removed," paints a far gloomier picture of the relations between private architect and his commercial client than in fact exists. In our experience, and that of many of our colleagues, evidence of an increasing number of enlightened commercial clients can be seen in many towns both large and small.

We enclose a photograph of a recently built self-service grocers' shop in Barnet which may interest you in this respect. It is one of a group of shops in which a continual development and review of the architecture used is encouraged personally by the chairman of the group.

J. M. AUSTIN-SMITH & PARTNER.

London.

[The photograph referred to above is printed overleaf. We shall be glad to hear from any other readers who can give examples of enlightened commercial clients.—ED.]

Applying Cost Analysis

SIR,—How can architects justify their existence? Can we rightly claim, and all good architects wish to, that by our employment a building will be (*a*) structurally more sound, (*b*) more economical, (*c*) functionally more efficient, and (*d*) more beautiful than one erected without our services?

In most cases the architect's capacity to fulfil (*a*), (*c*) and (*d*) is not in dispute, but (*b*) is undoubtedly a stumbling block for very many of us. How much we would like to persuade our clients that our fees and the fees of the quantity surveyor will be saved by the economies in building costs which our skill can produce. How rarely can we honestly say that we have succeeded in this!

In your articles on "Cost analysis," you have already touched upon the problem which faces the architect who, having taken endless pains to produce a design of simplicity in structure, space saving in plan and with much standardization of parts, receives tenders for the work which do not reflect justly the saving in cost inherent in his solution. Would a useful purpose be served if cost analysis was taken into the "enemy" camp, as it were, and a study made of two such problems as the following. We might learn something?

1. The small house. The speculative builder type of house with its complicated roof shapes and bay windows nearly always costs less, floor area for floor area, than the trim and simple rectangular house with gable ends, flat pitched roof and light construction favoured by many architects. Most of us have a shrewd suspicion why this is, but it would undoubtedly strengthen our arm with our clients if the full facts of this apparent anomaly were brought to light by cost investigation.

2. The firms who employ their own draughtsmen to produce drawings for new work, claiming that it is quite satisfactory and cheaper than employing an architect. Can this claim be justified? It is hard to believe this, as the buildings thus produced are usually structurally clumsy, far from economical in the use of space, and have so-called architectural features (the kind some engineers seem to like) lavishly applied.

G. L. THOMPSON.

Selby, Yorkshire.

"Private Practitioner"

SIR,—I have read with interest your correspondence concerning private and public architects.

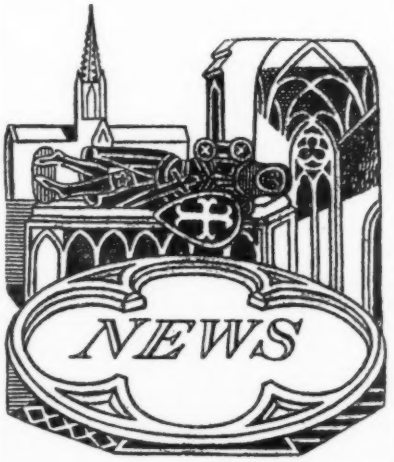
On the question of some or certain works a public architect may do, I venture to say he could design his own house for himself or his wife. Much the same as the cobbler repairs his family's shoes, or the cabinet maker makes a bookcase for the home of his family.

On the broader issue, I wonder if other public officers such as lawyers, doctors, civil engineers, or accountants take on private commissions in their respective field of operations. If not, perhaps they are sufficiently well paid not to do so, or certain legal or statutory limitations prevent them from so doing.

Maybe the gaps or loopholes are too numerous in the favour of public architectural officers to do private work.

Perhaps it would help a little if for private work bye-law and town planning applications and the like forms could only be signed by private practising architects—and not by agents or owners, and further, that this procedure was recognized and enforceable by law.

PRIVATE PRACTITIONER.



RIBA

Salaried Architects

The RIBA Committee formed to consider representation of members in salaried employment is as follows:—

Chairman, Richard Sheppard; vice-chairman, F. G. Southgate; honorary secretary, J. C. Barker.

Mr. Sheppard is a principal in private practice, as are two other committee members, G. Grenfell Baines and Sir Thomas Bennet.

Mr. Southgate is an official architect: so are committee members S. A. W. Johnson-Marshall and D. E. E. Gibson.

W. S. Frost and W. D. Lacey, also on the committee, are—like Mr. Barker—assistants in government service.

Three members are assistants in private practice: F. W. Gregory, John Lincoln and Miss Nadine Beddington.

The three remaining members are F. E. Green (teacher), Stuart Bentley (principal in charge of the architectural department of an industrial organization) and A. G. Jury (representative of the profession in Scotland).

Some of the people who spoke at the annual general meeting of the RIBA (see JOURNAL for January 13) will be invited to the Committee's next meeting in September.

COMPETITION

Closing date for "The Professional Man's House"

More information from the sponsors of a competition for "A House for a Professional Man" has been received since we briefly announced the competition last week. Most of this information is given and commented on by ASTRAGAL on page 205.

Architects who wish to enter for this competition, for which prizes of £250, £150 and £100 are being offered, must submit their designs by November 8. (All entries will be exhibited later in that month at the Building Exhibition, Olympia.)

Conditions can be obtained, on payment of a returnable deposit of £1 1s., from Tretol Ltd., House Competition Department, Tretol House, The Hyde, N.W.9.



The assessor will be Clifford Culpin. An example of his work, some housing at Lydd, is shown above.

PRIVATE PRACTICE

Builders Worry as Private Architects Disappear

"The gradual disappearance of the private practising architect is just as much a threat to the building industry as to the architectural profession itself."

That is the opinion of "a large number of the builders of the country, particularly a number of the older and well-established firms."

Or so the JOURNAL is told in a report from the London Society of Private Architects, which was recently formed with the object of sounding an alarum about salaried architects doing private work and "the ever-increasing intrusion into the field of private practice" by official architects.

The report from the Society fully justifies its opening announcement that "another successful meeting" has been held. It seems that the chairman, S. H. Statham, was able to tell the meeting not only that great interest had been aroused by the Society, but that letters had been received from "all over the country."

Mr. Statham, who "referred in particular" to a letter from New Zealand about the "seriously-threatened submergence of private practising architects" in that country, also gave the encouraging news that detailed steps were being taken to implement policy and that these would be laid before the next meeting.

Architects in private practice who are interested in joining the Society should read the JOURNAL'S editorial on page 493 of the issue for April 14.

MOHLG

Housing Progress

In June 27,187 houses were completed: 30,973 were completed in the same month last year.

Private builders put up 9,891 of the houses in the June total. By the end of that month they had completed 50,044 houses this year, compared with 99,646 built by local authorities.

OPERA HOUSE

New Floor at Covent Garden

During the past month workmen have been laying foundations for the new stalls floor at the Royal Opera House, Covent Garden. The theatre is now closed, the old floor has been ripped away, and the new flooring—which will have a steeper rake—is being put into position.

When the Sadlers Wells Ballet begins a season on August 23, the audience in the back row of the stalls will be sitting six inches higher than before, and will thus have a better view of the dancers' feet.

ITALY

Church Congress

A national congress on church architecture will be held in Bologna on September 23, 24, 25, 1955, at the instigation of Cardinal Giacomo Lercaro, the Archbishop of Bologna.

There will also be an exhibition of post-war Italian church architecture, together with an exhibition of modern church hangings in Europe.

A A

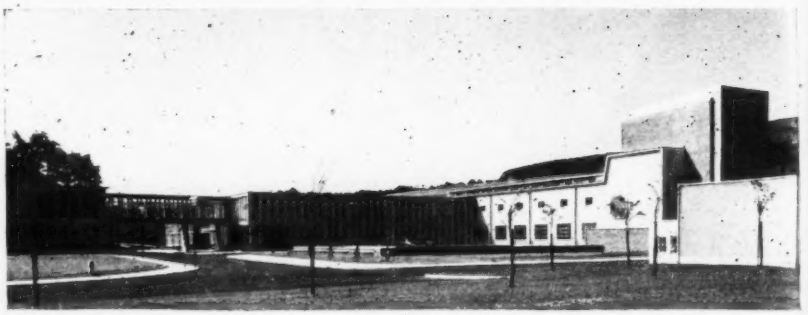
Evening Classes

The Council of the Architectural Association are again offering facilities for evening classes in design to architectural students who have passed the RIBA Intermediate Examination, and who are not attending at any School of Architecture.

The classes are not intended as a preparation for the RIBA Finals, but are to provide opportunities for discussion and criticism of students' work.

The course will be staffed on an honorary basis. No charge will be made for tuition, but students will be required to pay a registration fee of ten shillings and sixpence each term.

Students who are interested should write to the principal's Administrative Assistant, School of Architecture, 34-36 Bedford Square, W.C.1.



The recently-completed Vale of Leven hospital, Alexandria, Dumbartonshire, details of which will appear in a future issue. The architect was J. L. Gleave of John Keppie, Henderson & J. L. Gleave, in association with architects of the Department of Health for Scotland and the Western Regional Hospital Board.

MOE

Bulletin on Consumption of Fuel in Schools

The Ministry of Education's thirteenth Building Bulletin, published last week at 2s., deals with *Fuel Consumption in Schools.*

The report, which was prepared after the Building Research Station had studied existing heating systems, envisages the technical possibility of extensive savings in fuel consumed in schools. It states that although most school buildings were occupied for only 40 out of the 168 hours of the week, it was not common practice to close down to the minimum the heating systems during the hours the class rooms were not in use—at night and during week-ends. Maintained schools in England and Wales used between 1,500,000 and 2 million tons of fuel a year.

The report says that in present practice fuel consumption is considerably higher than necessary. The suggestion is made that authorities should consider establishing their own agencies for checking fuel consumption in their schools, for supervising control programmes, stoking arrangements, and generally for seeking economies in this field.

MOW

Educational Films

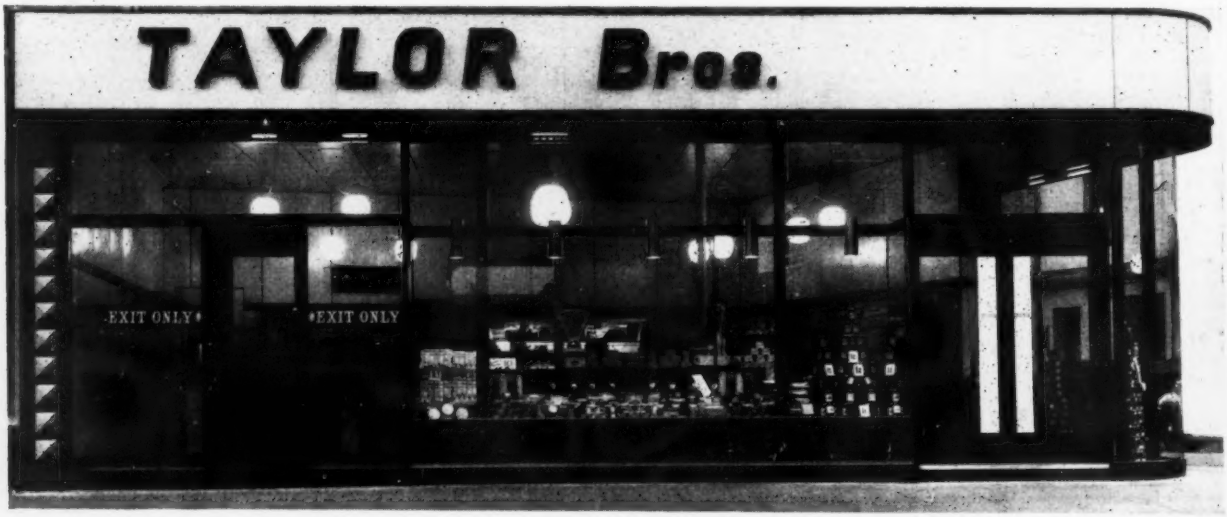
Six films on vibrated concrete, general building economy and new techniques were shown by the Ministry of Works recently. With a running time of about ten minutes each they can only be introductions to the subjects, but as such they are very stimulating. The films are available for hire and would be most suitable additions to the student's first year curricula.

ROYAL NAVY

Barracks for Petty Officers

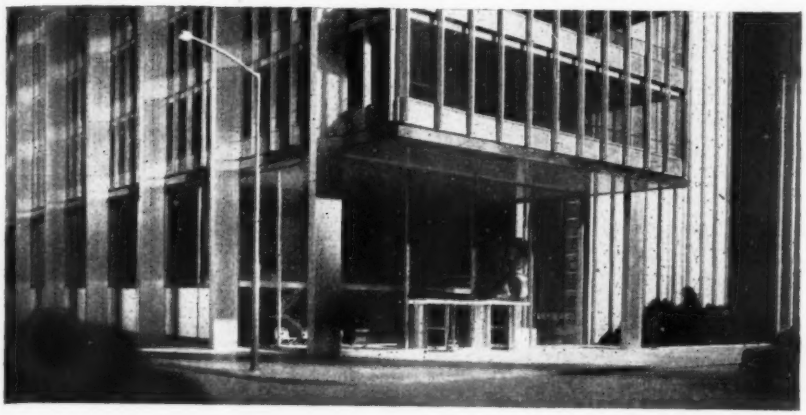
An accommodation block for Chief Petty Officers and Petty Officers at the Royal Naval Barracks, Devonport, was opened by the First Lord of the Admiralty, the Rt. Hon. J. P. L. Thomas, last month. General planning was under the supervision of the Civil Engineer-in-Chief of the Admiralty, with E. Berry Webber as Consultant Architect. Mr. Webber holds an appointment in a similar capacity at all three major home

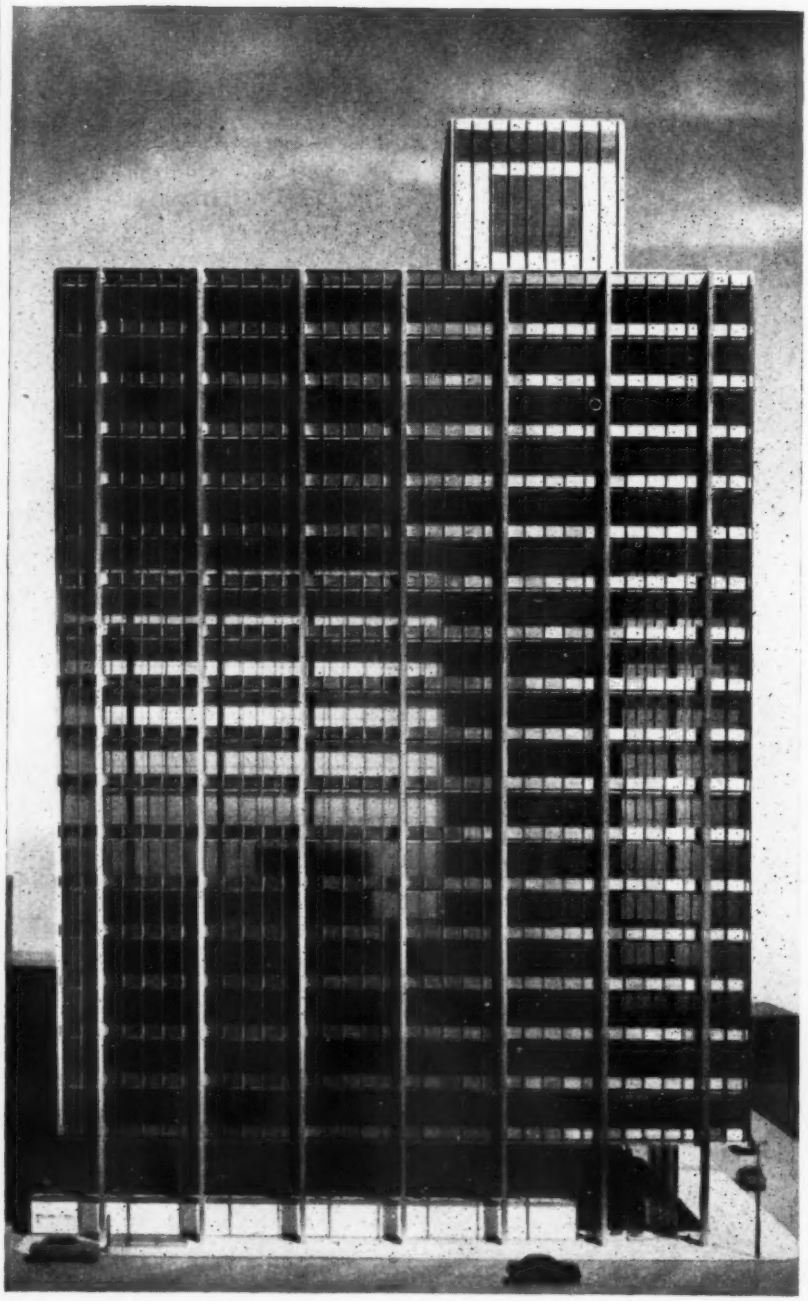
(continued on page 228)



The owners of this shop, at Barnet, are described in a letter from J. M. Austin-Smith—on the previous page— as "enlightened clients."

CHICAGO OFFICES WITH "LARGEST-EVER" CLEAR FLOOR SPAN





Skidmore, Owings and Merrill, the architects for a 250 ft. office block (300,000 sq. ft.) to be built in Chicago—shown here in model form—have designed the building in such a way as to provide what is described as " the largest clear span ever built in a multi-storey structure." The block will, in fact, have an unobstructed interior area of 177 ft. by 58 ft. This has been made possible not only by the design of an external steel skeleton (with a new application of torsional connections of spandrel beams), but also by the setting-apart of the tower for vertical transportation. The building is to be finished with stainless steel (it is Chicago's first stainless steel and glass block), and is to have a special all-over washing system. The amount of free space around the building, in relation to the ground area, is unusual on such expensive land in an American city. Part of it will be used for planting. The ground floor will contain a car park. Floor Construction: *cellular flooring providing distribution system for heating and air conditioning and containing ducts for all wiring, with electrical and telephone and other communication outlets at frequent intervals.* Exterior Finishes: *office and public areas, stainless steel and glass; enclosed parking garage, granite panels; vertical service shaft, stainless steel.* Windows: *stainless steel—all units fixed, glazed with double pane, with blue heat-absorbing glass on external surface.* Heating and air conditioning: *Radiant system, including individual room control for heating and cooling, will be carried through the cellular flooring to slots around the perimeter of the building where air will be distributed at the exterior walls and through ducts above ceiling to interior spaces. Three boilers will be oil fired. Estimated cost of building:* $6,000,000. *Expected completion date:* 1957

(continued from page 226)

ports, the others being Portsmouth and Chatham. Accommodation was designed to an inter-service standard, and the building faced with Portland stone, as opposed to the harder Plymouth Limestone of earlier buildings. The building cost about £750,000, taking over two years to erect.

Aluminium Production Film

Britain imported some 221,800 short tons of aluminium from Canada in 1954, and recently the Northern Aluminium Co. Ltd. showed a film prepared by Aluminium (Canada) Ltd., illustrating some of the immense installations required to realize this production.

In 1951 Kitimat was still a small Indian settlement in the backwoods of British Columbia: today it houses one of the largest aluminium smelters in existence, with a town of over 500 completed houses. The town itself is the work of Clarence Stein and may grow eventually to house 50,000 people. At the same time, Alcan of Canada dammed the Nechako River to form a 150-mile reservoir, blasted a tunnel 10 miles long, built an underground hydro-electric power station and carried the power 50 miles to Kitimat over a 5,000-ft. pass.

IRAKI

Recent Town Planning Appointments

Max Lock and Partners, architects and town planning consultants, have recently been appointed by the Iraki Government to prepare a survey and plan for Basra. The firm are at present engaged on studies for the redevelopment of Margis the present port of Basra, and Max Lock has already submitted a preliminary report on the possibility of establishing a new port at Um Qasr, 40 miles south of Basra at the head of the Persian Gulf.

Max Lock and his partner, G. W. King, are concurrently working on town planning studies in the Kingdom of Jordan at the joint behest of UN and the Jordan Government. Their first scheme, which was officially ratified this month is for the development of the port of Aqaba in the Red Sea area.

SALARIES

Russian Architects Paid with Rice

Three Soviet architects (Messrs. Andreev and Zwezdian and Mrs. Kislova) are to be paid in rice for designing buildings for the International Trade Fair in Peking.

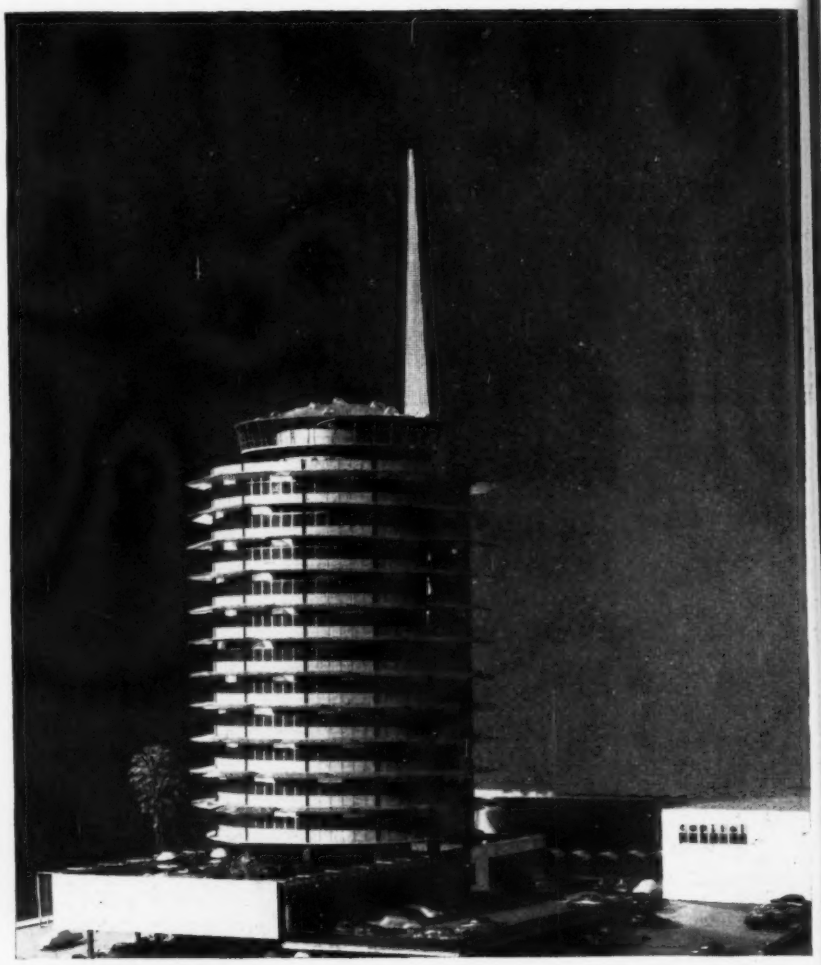
DIARY

On Not Finishing Buildings. Talk on Interior Design and the Modern Movement. By Ian McCallum. In the BBC Third Programme. 7.25 p.m. AUGUST 18

Town and Country Planning Summer School. Sponsor: TPI, 18, Ashley Place, S.W.1. At Cambridge University. AUGUST 22-27

International Conference on Regional Planning and Development. At Bedford College, London. Registration fee, £3. Information from Norman J. Hart, 45, Northcote Avenue, W.5. SEPTEMBER 29-OCTOBER 2

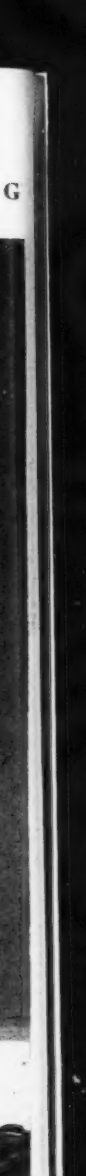
AMERICAN WEST COAST BUILDING



Above: what is claimed to be the "world's first round office building" has been designed by Welton Becket, F.A.I.A., and Associates, of California, for Capitol Records Inc. It is to be built in Hollywood at an estimated cost of two million dollars, and the top storey executive suite will be surmounted by a 100-ft. trylon of perforated aluminium.



Left: construction is to begin on a more conventional slab block in Vancouver, this time under the direction of an engineer. The building will become B.C. Electric Company's new headquarters, and is "directed" by Tom Ingledow of B.C.E., with Ned Pratt of Sharp, Thompson, Berwick and Pratt, as chief architect. The external cladding will be double-paned glass and enamelled steel, and the estimated cost is six million dollars. The tower covers one quarter of the site and includes two auditoria.



WORKING DETAIL **STAIRCASES: 19**

STAIRCASE: SCHOOL AT NEWTON AYCLIFFE, CO. DURHAM

Grenfell Baines and Hargreaves, architects, in collaboration with G. R. Clayton, architect to the Durham County Council

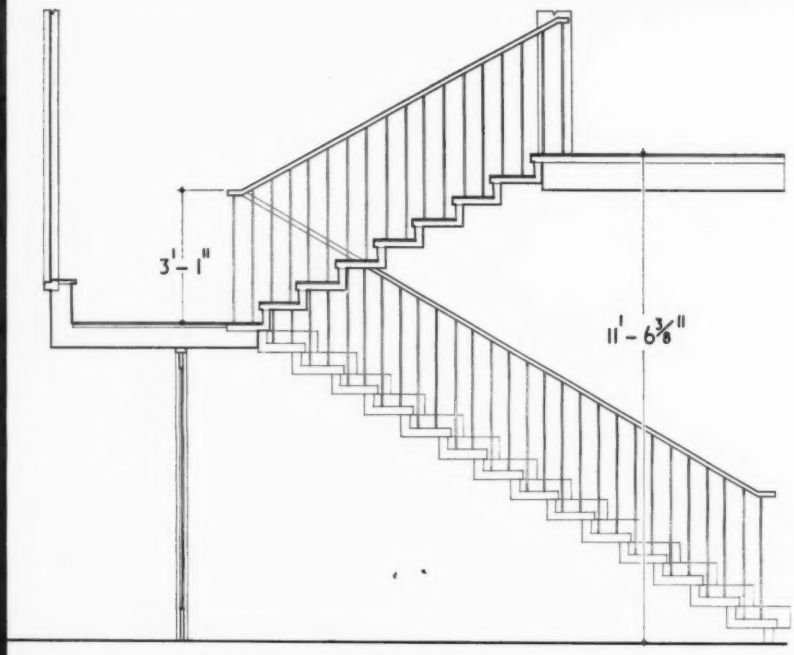


The stairway itself is built up from precast concrete units, each of which normally comprises a riser and a tread. All are built into the wall to a depth of 8½ in. The units terminate on the wall side in a block which is rectangular in elevation and which, as it stands proud of the plaster, serves as a wall string. A second point of interest is the method of holding the balusters. M.s. sleeves are cast in the treads where they serve to anchor the reinforcement. The foot of the balusters is drilled and tapped, and the bottom four inches are fined down from ¾ in. to ½ in. diameter. The balusters are then passed through a bearing plate into the sleeve and are secured by means of a set screw passing up from the underside of the tread and bearing likewise on a plate.

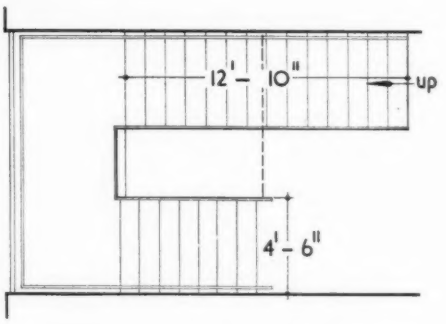
WORKING DETAIL

STAIRCASE: SCHOOL AT NEWTON AYCLIFFE, CO. DURHAM

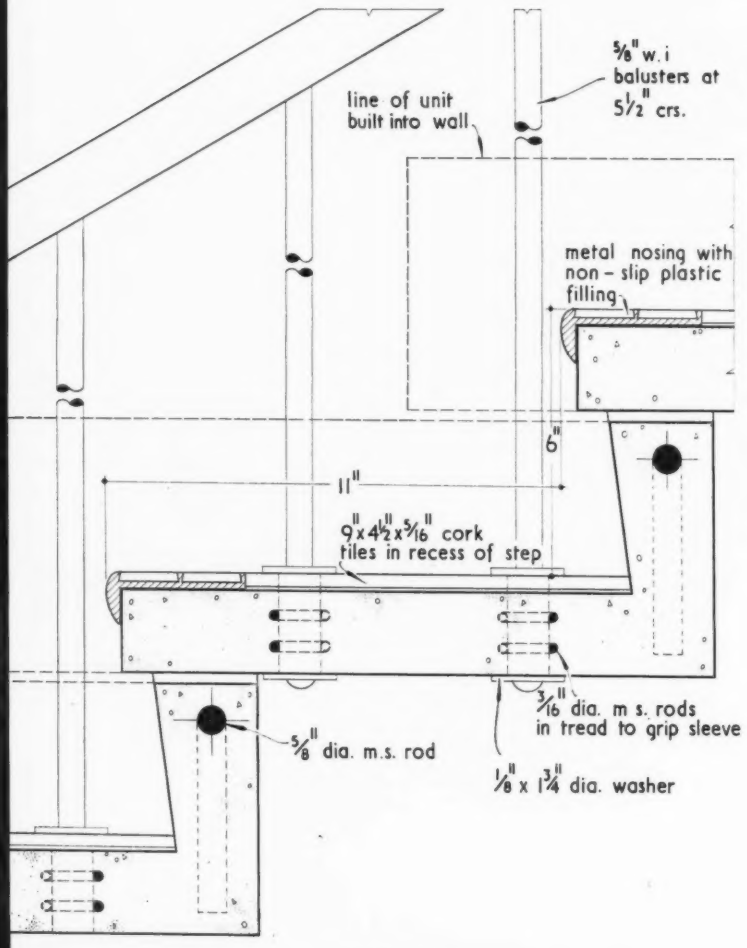
Grenfell Baines and Hargreaves, architects, in collaboration with G. R. Clayton, architect to the Durham County Council



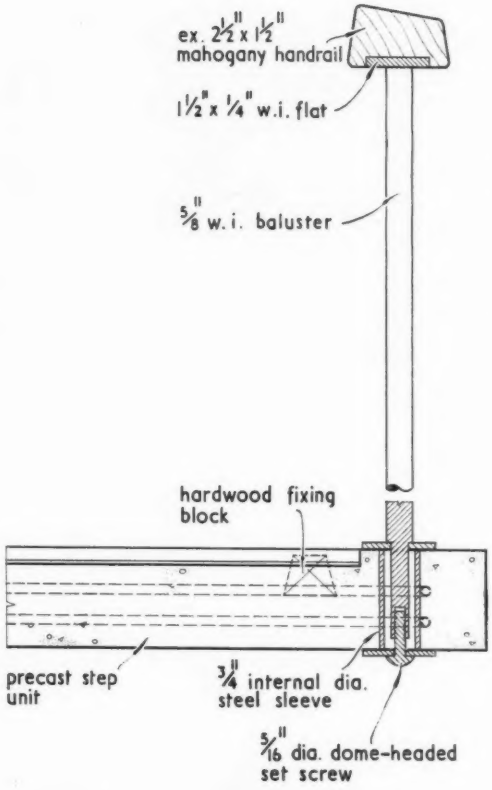
SECTION THROUGH STAIRCASE. scale 1/4" = 1'-0"



KEY PLAN. scale 1/8" = 1'-0"



LONGITUDINAL SECTION THROUGH STAIRCASE.
scale 1/4 full size



SECTION THROUGH BALUSTRADE.

WORKING DETAIL

STAIRCASE: SCHOOL AT WORTHING

S. A. W. Johnson-Marshall, chief architect. Architects and Building Board, M.O.E.; Maurice Lee, architect-in-charge; in consultation with F. R. Steele, architect to the West Sussex County Council



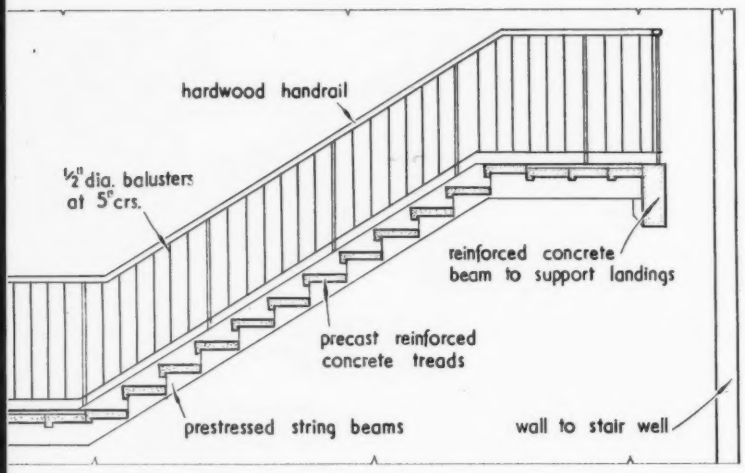
The precast concrete treads are supported on projecting shelves formed in the post-tensioned string beams. The welded m.s. balustrade, which runs both sides of the stair, is supported on tube uprights grouted into pre-formed sockets in the string beam.

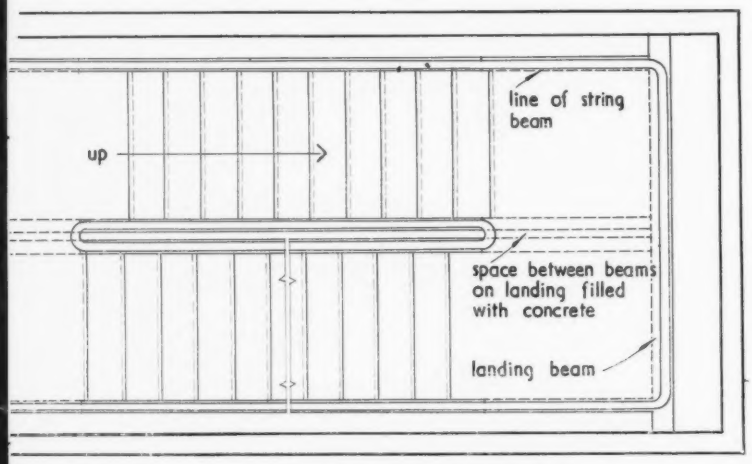
WORKING DETAIL

STAIRCASES: 20

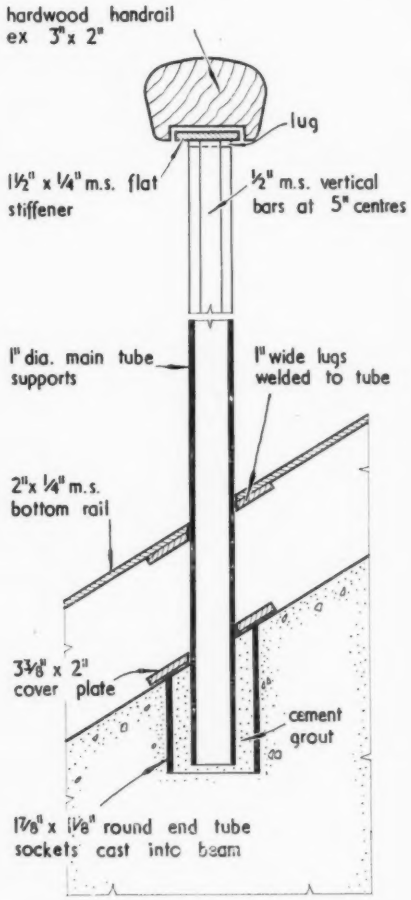
STAIRCASE: SCHOOL AT WORTHING

S. A. W. Johnson-Marshall, chief architect, Architects and Building Board, M.O.E.; Maurice Lee, architect-in-charge; in consultation with F. R. Steele, architect to the West Sussex County Council

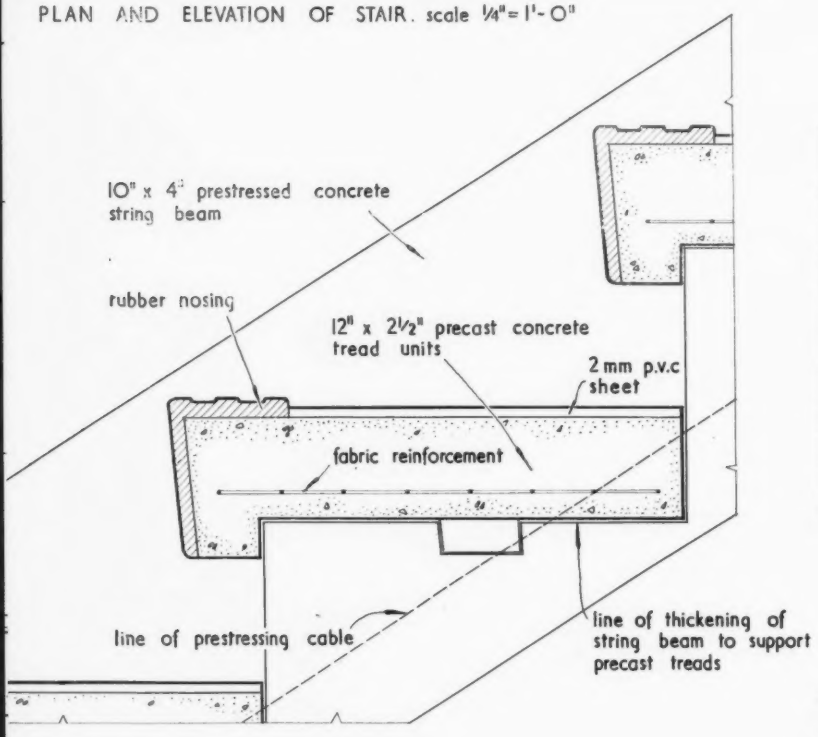




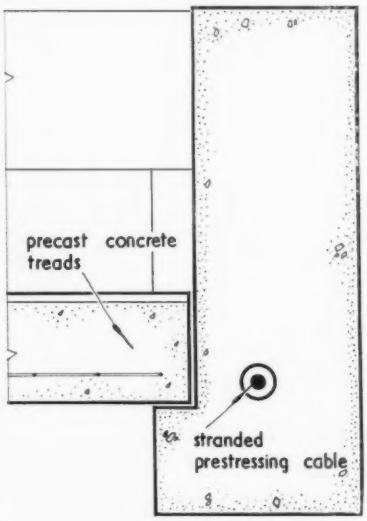
PLAN AND ELEVATION OF STAIR. scale ¼" = 1'-0"



DETAIL OF HANDRAIL. scale ¼ full size



SECTION OF TREAD. scale ¼ full size



SECTION OF PRESTRESSED STRING BEAM. scale ¼ full size

TECHNICAL SECTION

The latest PEP broadsheet* tells us that the British Standards Institution began life as a committee, formed by the Institution of Civil Engineers, to standardise iron and steel sections. This was in 1901. In the following year it received a government grant, and by 1914 had issued 64 specifications. The grant was increased and a Royal Charter given in 1929. The Committee's work was still confined to engineering, but two years later its terms of reference were extended to cover all industries and its present title established. By 1929, 1,000 standards had been issued, and now there are nearly 3,000. Since the war there have been two reports on BSI†, one of which (the Cunliffe Committee) found a persistent criticism that " manufacturing interests tend to prevail over those of users." If the first stage in standardisation is to reduce needless variety this was, perhaps, inevitable. But the second stage—which we seem now to be entering—should give us standards based on a more rigorous analysis of purpose and function. The problem is that a standard which attempts to depart from current practice may be still-born unless there is a wide demand for the product.

* Planning Vol. XXI No. 382 PEP, 19, Queen Anne's Gate, S.W.1.
† Two departmental Committees under the chairmanships of Sir Ernest Lemon and Geoffrey Cunliffe.

This week's special article

19 CONSTRUCTION: DETAILS
technical study of mayfield school

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

It is now a year since we began a series of technical studies on Mayfield School, Putney, an LCC Secondary School which is receiving extensive additions to make it a comprehensive school. The architects are Powell and Moya, the engineers Ove Arup and Partners. This job was chosen for treatment in this way because it showed a certain approach to design—characterised by a discriminating use of both traditional and industrial techniques—which we believe to be fruitful in the present state of the industry. Our first two articles dealt with the classroom blocks, with their floors and walls (July 1, 1954) and with their roof construction (August 12, 1954). This week we carry the story on by describing the structure of the Assembly Hall and the Gymnasia.

At the time when the classroom blocks were being designed steel was tightly rationed and it was this which led the architects and engineers to agree on the use of timber trusses. In the gymnasia, where the spans are of the same order as those of the classroom blocks, the same choice of material was made. But by the time the designers came to turn their attention to the Assembly Hall the steel position had improved and steel once more became a possible choice; and, after first developing a concrete folded slab construction, they finally chose a tubular steel space frame. This provided a very light structure, one which could be fabricated in the factory from standard sections and which lent itself to ease of site handling.

THE ASSEMBLY HALL

The Assembly Hall is multi-purpose, to be

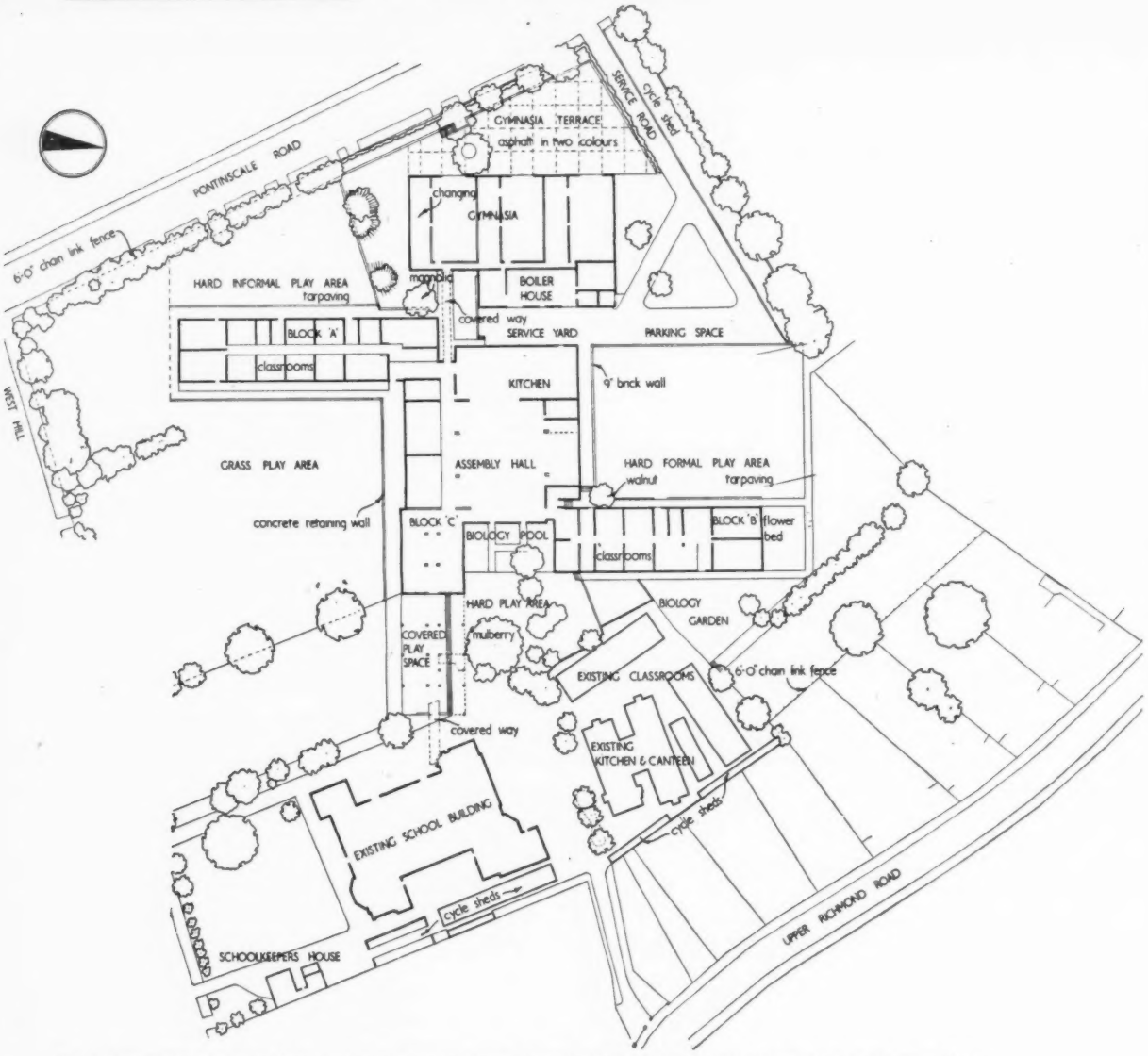


Fig. 1. Layout plan of new buildings showing relationship between Assembly Hall and Gymnasia blocks and the three classroom blocks.

used for school assembly, dining, physical activities, drama and music. Public entertainments will be given on occasional licence. A permanent stage was requested, upon which rudimentary theatrical productions might be performed. The use of a complex system of stage equipment was not thought necessary at first, but at a later date the organisers decided that the equipment should be considerably elaborated.

The architects responded to this problem by providing a single-storey Assembly Hall group situated adjacent to the main entrance hall and providing a circulation core to the whole school. The accommodation consists of the Assembly Hall itself of 6,100 sq. ft., 3 Auxiliary Halls, each of 1,100 sq. ft., a Kitchen with dependent rooms of 3,500 sq. ft., and lavatories, a chair store, music practice rooms, etc. The Auxiliary Halls, which will be used for informal teaching or special activities, consist of two adjoining halls closing a shorter end to the Main Hall and which can be isolated from it by folding/sliding doors. The third Auxiliary Hall can be used either for independent activity or as a full-sized stage with space for wings on each side.

The architects and engineers wished to produce a well-lighted continuous series of halls, which were to be graceful in form, economic in structure, acoustically satisfactory and accommodating the necessary movement of pupils. They devised a tent-like structure with a two-level roof; the higher roof, with an area of 100 ft. by 50 ft., to be supported on four columns, and the lower roof carried from a beam suspended 9 ft. from the higher roof, the change in level being fully glazed with patent glazing.

THE ROOF STRUCTURE

The high-level roof may be described as a 4-columned umbrella structure. It has two triangulated space frames spanning the longer dimension of the hall. These are largely constructed from steel tubes and standard section mild steel channels. The latter, which form the topmost member of the frames, span the shorter dimension. The combination of tubes and standard sections in the space frames makes the best use of both types of section: the tubes give the angle-less freedom of non-perpendicular construction, and the topmost channel sections allow an easy fixing to the timber joists of the flat roof.

The engineers describe the structure as "a compromise between a triangulated frame action and a continuous slab action . . ." The positions of the columns are determined by two considerations: first, the requirements of the plan and second, a position which will impose the most uniform stresses on the homogeneous roof unit and which will in turn imply a greater uniformity in the sizes of steel members and a corresponding reduction in the amount of steel required.

The columns, whose directional axis is determined by site lines, are calculated for wind loading on the assumption that they receive full fixity at the base, and are pin jointed at the head, with only incidental restraint from the surrounding lower level roofs. With an overall dimension of

2 ft. x 1 ft. 3 in., they are built up from 2/15 in. x 4 in. channels, with a 16 in. space between their backs. The channels are continuously plated on one side and partially plated on the other to allow access to the hollow duct, through which the rainwater pipes and the electrical conduit can run from the roof to the ground. Heavy plates, ¾ in. thick, have been welded to the top and bottom of the columns: at the top to receive the lower booms of the space frames and at the bottom to provide a bearing, through which the 15 in. bolts are grouted into the reinforced concrete foundations. The columns are braced together on the shorter axis of the hall by encased trussed beams, which provide at the stage end a proscenium opening and at the auxiliary halls end a fixing head for the sliding/folding doors.

The soil conditions were good, and a load of 2½ tons to the sq. ft. could be taken. The economy in the number of columns is not in any way related to the state of the substructure.

It is of interest to note that during calculation the engineers found that consideration of the space frames as plane two-dimensional trusses gave results comparable with those obtained from the more complicated three-dimensional space frame analysis.

FABRICATION AND ERECTION

In designing for the fabrication and erection of the steelwork, the engineers specified that as much as possible of the precision jig work and welding should be carried out in the contractor's workshops, off the site. To design for workshop fabrication implies that the largest unit must be of transportable size. Each space frame, therefore, was designed as two independent tubular trusses, each of which was to be fabricated in three separate sections, later to be assembled on the site. The site fabrication and hoisting were problems which had to be decided by the steelwork contractor for, though it would have been of great help if the matter could have been discussed with him at an early stage in the design, the system of tendering in this country does not make the contractor known until the design is complete. However, the contractor's solution for assembling and hoisting was very satisfactory, as well as being slightly spectacular. He proposed assembling the roof steelwork in its entirety, on the ground, immediately below its finally intended position. There the trusses would be bolted together, the continuous channels bolted on to already prepared plates, the K-bracing and vertical stiffeners fixed; a certain amount of drilling for rafter fixings and such tasks would have to be done and the truss would then be ready for raising into position.

The equipment to be used for hoisting would be two steel masts and pulleys, guyed to the ground. A mast would be situated centrally, at each of the shorter ends of the roof, in the first bay from the perimeter. Each crane would hoist a specially prepared built-up joist which would support the four top booms from cylindrical cups welded on to the joists. When the roof had been hoisted the four columns would be raised separately into position from independent masts and pulleys, and after they had been bolted into the foundations the roof could be lowered on to them.

This was agreed by the engineers, who rechecked their calculations to see if hoisting by the top booms would cause any undesirable overstressing of the roof structure. The results were found to be favourable.

When this operation was later carried out it was accomplished without a hitch and completed in well under a working day.

SUSPENDED EDGE BEAMS AND ROOF

Immediately below the perimeter of the high level roof runs the edge beam. It is suspended from the continuous channels of the space frames by 1-in. diameter mild steel bars welded to plates which are bolted to the channels. The hangers form the central

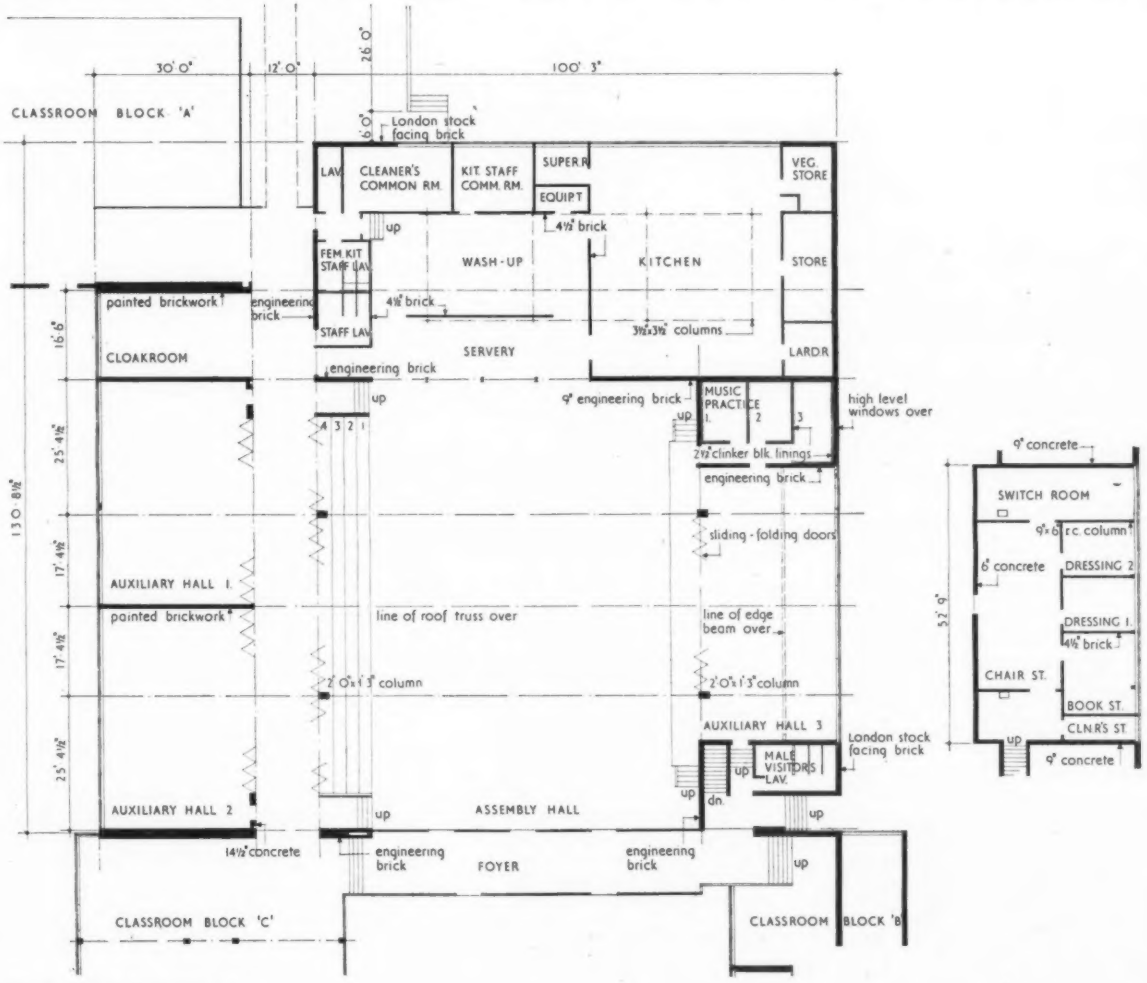
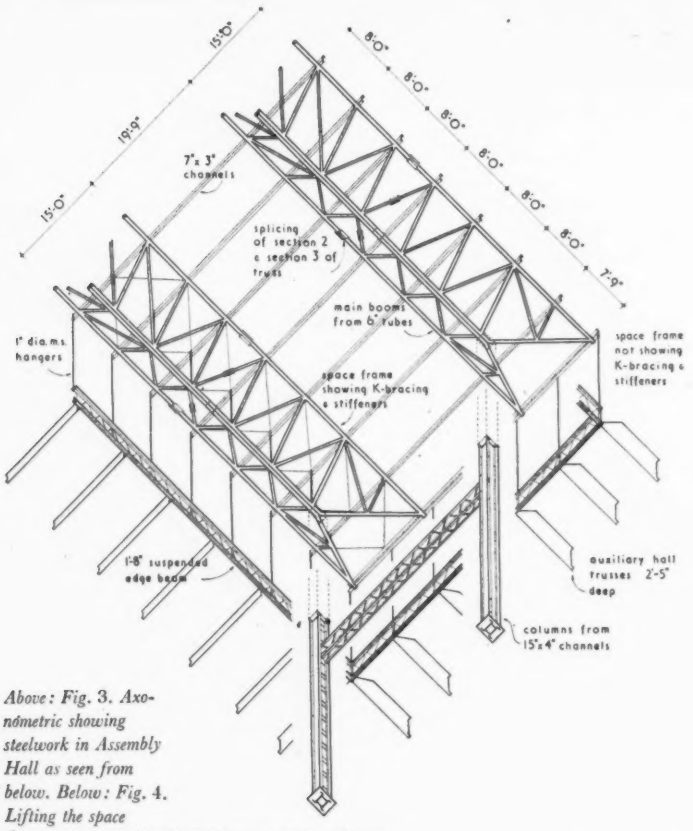
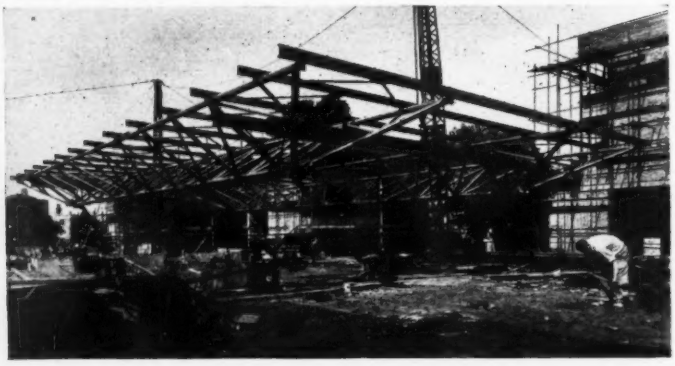


Fig. 2. Plan of the Assembly Hall.



Above: Fig. 3. Axonometric showing steelwork in Assembly Hall as seen from below. Below: Fig. 4. Lifting the space frames. Bottom: Fig. 5. Raising one of the columns.





core of the edge beam which is, in effect, a lattice beam, made from two sets of 3-in. × 2-in. angles bolted to the hanger ends and forming the top and bottom members of the beam. The hangers along the short ends of the high level roof are welded to angles which are bolted to the endmost channels. The surrounding low level roof trusses and beams are supported from the edge beam. The low level bays are 8 or 9 ft. wide, and are all horizontally cross-braced with 2-in. × ¼-in. mild steel flats.

The roof covering is laid on 2-in. wood-wool slabs nailed to timber joists. The wood-wool is finished with a ½-in. screed, chicken wire reinforced, and the 3-layer bituminous roofing felt is topped with granite chippings. There is a timber upstand fillet on the perimeter and a combined fascia and flashing of ribbed aluminium.

A screed with a gradient was not needed for rainwater drainage as the deflection of the space frame, which was about 1/400th of the 73 feet span, gave a fall to midspan of about 2 in. The heavy duty copper rainwater pipes were carried through the space frames and down the centre of the columns. they did not interfere with column foundations, which were sufficiently deep to allow them to break free under the floor.

SPACE FRAME CASING

Although the finishes of the Assembly Hall are not to be covered by this article, mention must be made of the space frame casing. The architects decided against exposing the space frames for three reasons: first, the acoustics could not be as satisfactory without the boarding; second, the extract fans, which were additionally necessary because the hall is to be used as a dining room, could be unobtrusively housed in the casing; and third, the steelwork would have had to have been more extravagantly detailed before it could be exposed.

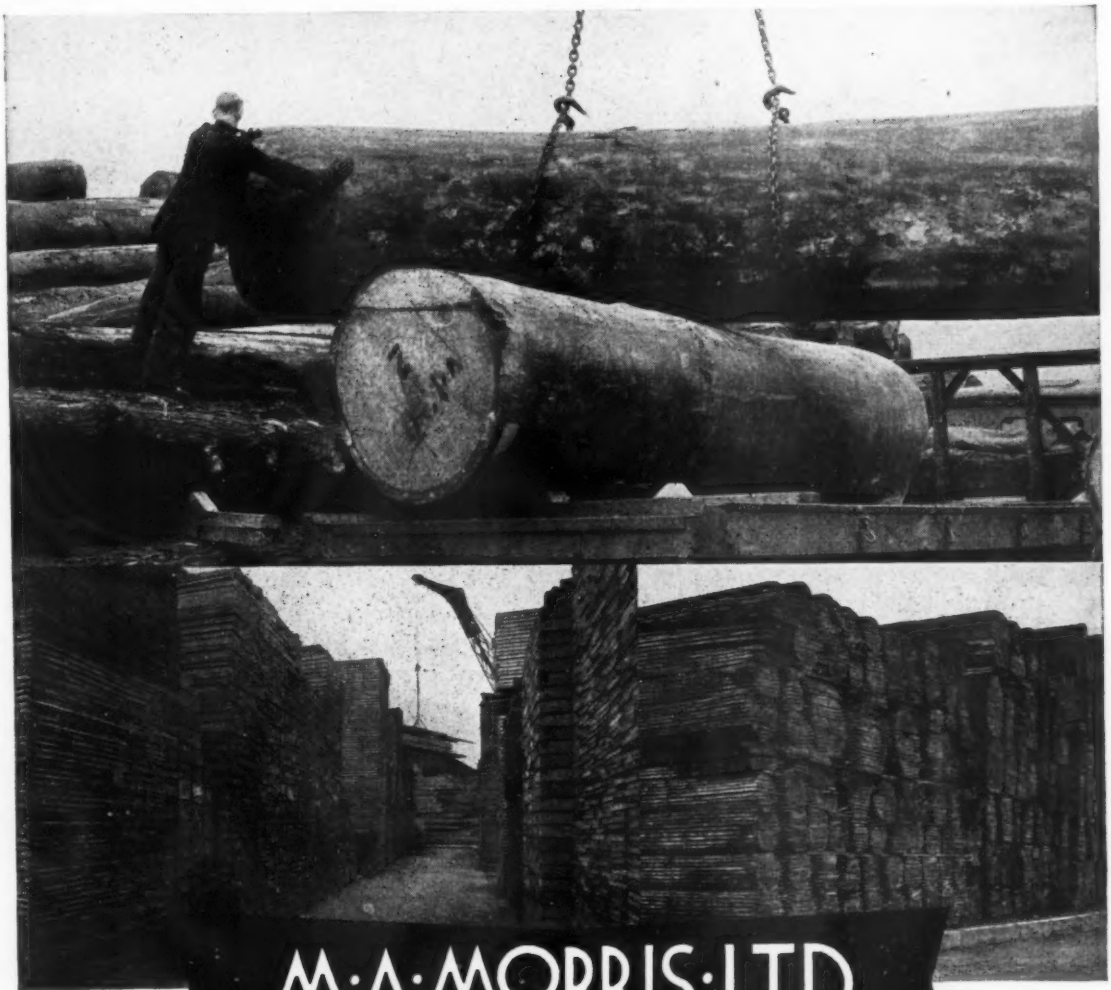
The timber space frame casings are built on 6-in. by 3-in. purlins at 8-ft. centres, U-bolted to the steel tubes and parallel to the main booms. The 3-in. by 2-in. joists at 16-in. centres are notched to the purlins and provide a fixing for the 7-in. by 1¼-in. African mahogany boarding which is secret nailed ship-lap jointed and finished with a matt varnish.

HEATING AND VENTILATION

Heating is by means of hot water passing through steel tubes which are embedded 2 in. deep in the floor slab. The other hot-water installations in the school require a circulation temperature of 180° F. By bedding the pipes to this depth it was possible to increase the heating area of each pipe but also to reduce the surface temperature to the desired 100° F. The standard of ventilation required was determined by the fact that the assembly hall must also serve as a dining hall. The system is operated by two centrifugal cased fans: one fan situated at the centre of each space frame. They are mounted on an anti-vibration platform and are run at a speed of 290 r.p.m., extracting 2,500 c.f.m. This amounts to approximately 2½ air changes per hour. The air to be ex-

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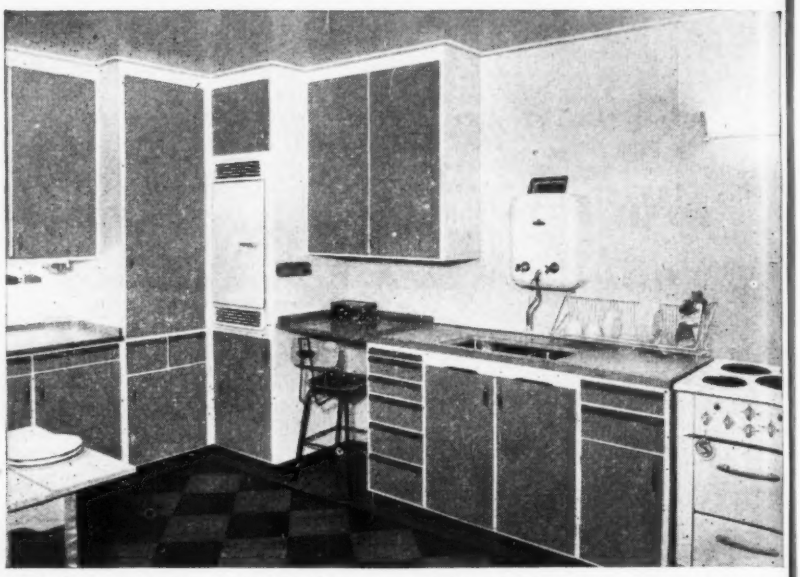
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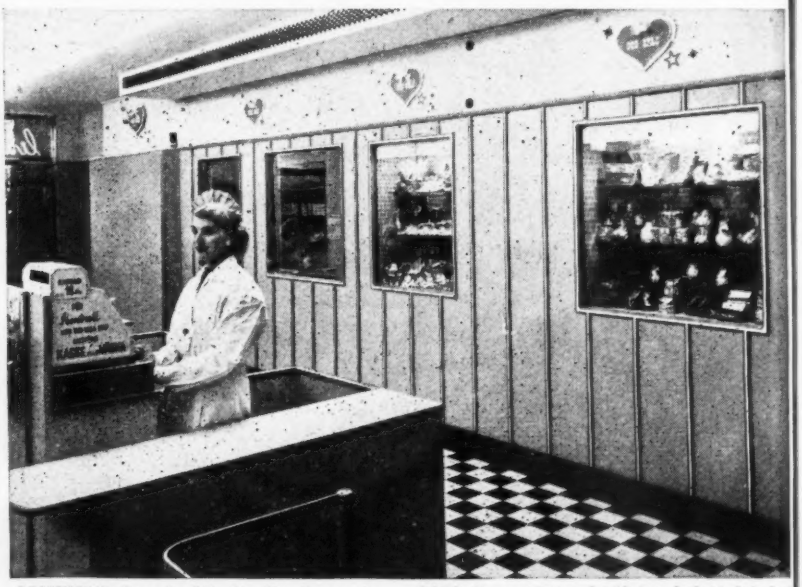
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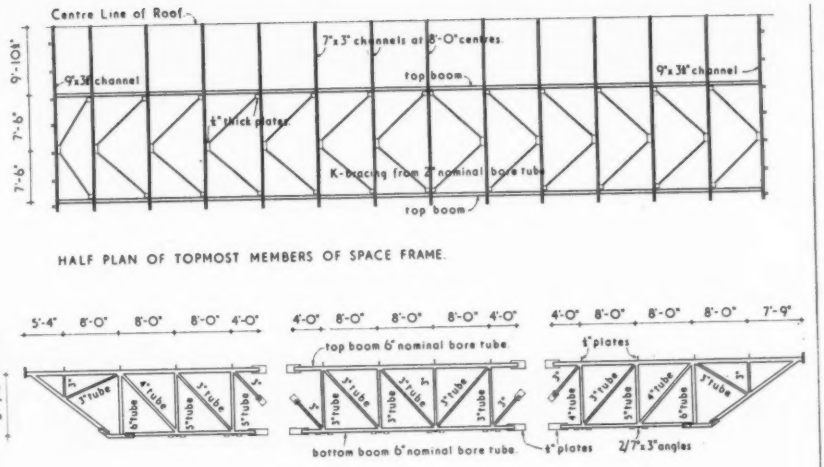
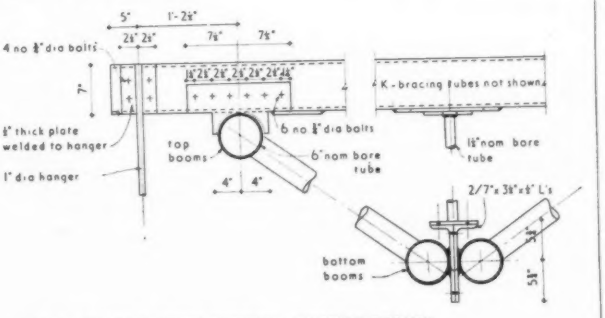
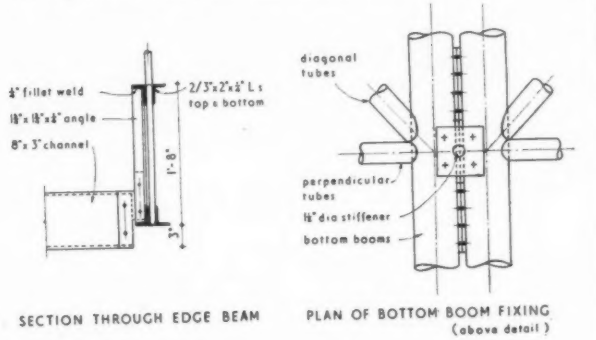


Fig. 6. Space frame elements.





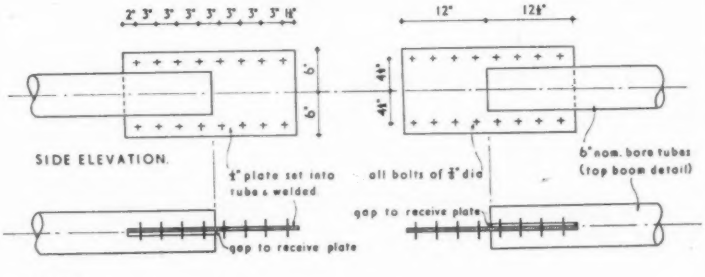


Fig. 7. Space frame jointing details.

tracted is drawn through a 4-in. continuous slit between the top of the timber space frame casing and the ceiling. Each fan is fitted with a two-directional extended inlet and a draught diverter cowl on the roof.

THE GYMNASIA BLOCK

The Gymnasia block, with the boiler house attached to it, lies about 60 ft. to the west of the main assembly hall corridor and is approached by a covered way. The boiler house is structurally independent of the gymnasia, and is constructed with load-bearing brick walls and pre-stressed plank roof. This system has already been fully discussed in the classroom block articles.

The three gymnasia each measure 67 ft. by 36 ft. and have an overall height of 21 ft. They have been planned with their long sides parallel and square to one another, and they are spaced by low-level suites of rooms, 19 ft. wide, 13 ft. high, and the same length as the halls. These suites, of which there is one to each gymnasium, include changing rooms, showers, kit stores, apparatus stores and drying rooms. This arrangement gives a structure with alternating high and low levels. This pattern is repeated in the changing room suites themselves, where a series of trusses bridging the short span have been used to provide clerestorey lighting. This method of lighting, which is very characteristic of the school as a whole, here has the additional advantage of making it easy to provide natural ventilation.

The choice of structure—timber and load-bearing brick—follows that of the classroom blocks and was determined by shortages. The timber is African mahogany, which was unlicensed, readily available and competitively priced at the time of building, and the brick is London stock.

The structure of the gymnasia proper can best be described as a conventional timber truss construction, spanning the shorter dimension of the halls and fixed to 6-ft. high timber columns, spaced at 8-ft. 4-in. centres. The columns bear on to structural brick walls which run round all four sides and thus form a solid plinth to the building from which the timber structure springs. The column depth is glazed as fully as the adjacent structure allows.

The timber trusses which bridge the 18-ft. wide changing room suites are fixed directly to the bottom lengths of the columns supporting the high level roofs. These trusses do the additional work of stabilizing the bases of the columns, and distributing the longitudinal wind load stresses throughout the structure. Wind load stresses along the short axis of the block are restrained by cross braces in the end bays of each gymnasium. They consist of 1½-in. by ¼-in. mild-steel flats, coach screwed into the top booms of the trusses.

The gymnasium which has no changing room suite at its side, has required the use of reinforced concrete columns in place of timber columns, set into the cavity wall to give stability against wind loading.

The low-level changing room suites are lit by monitor-type roof lighting, which has

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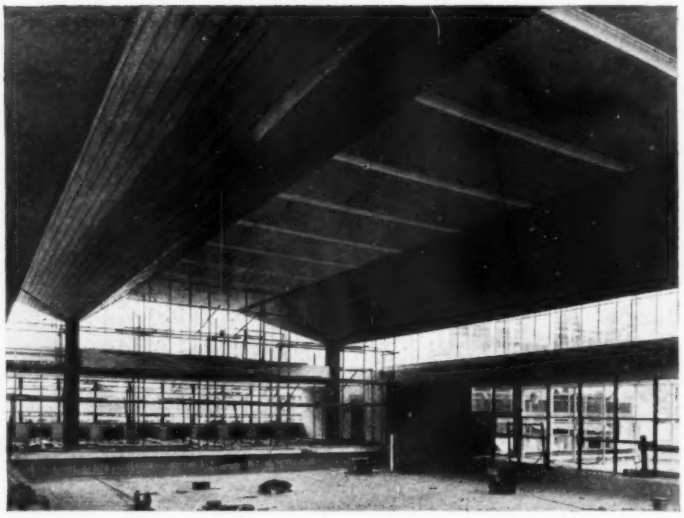
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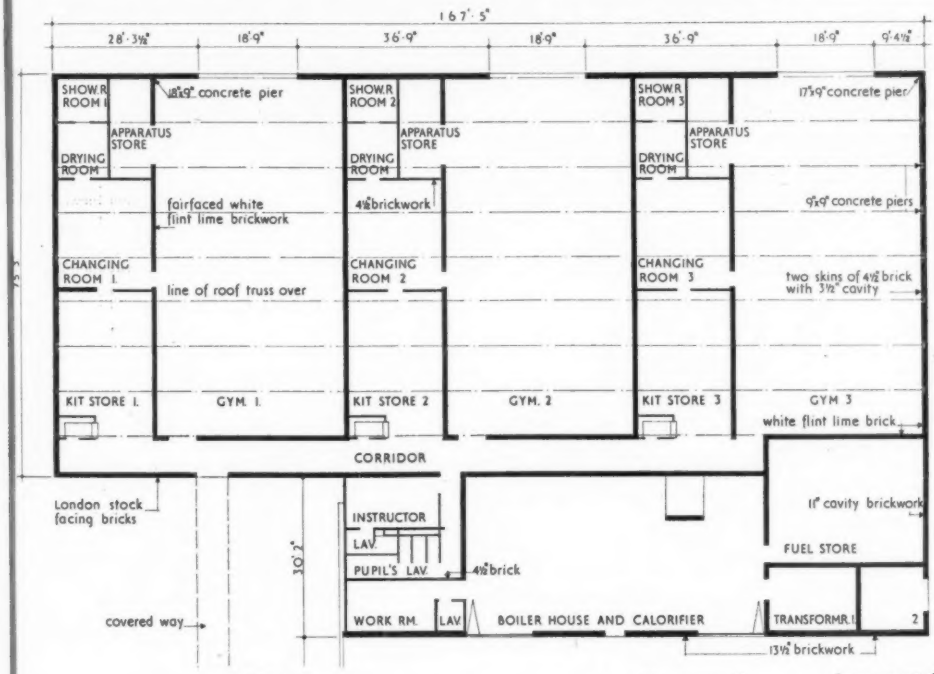
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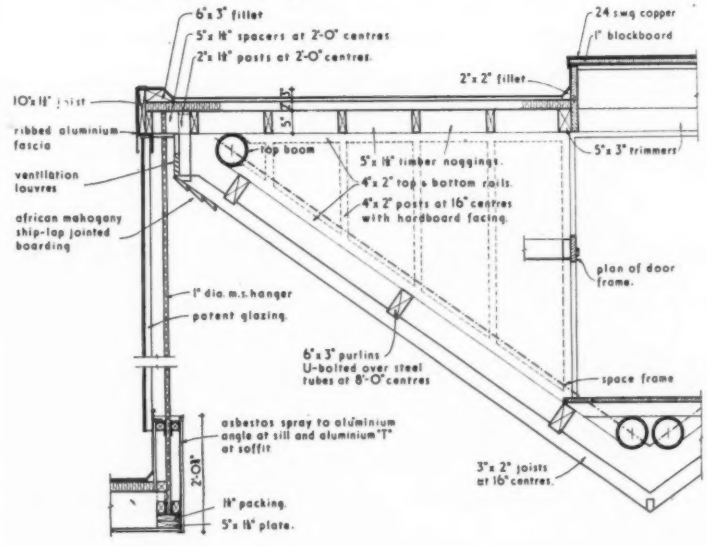
CON/39







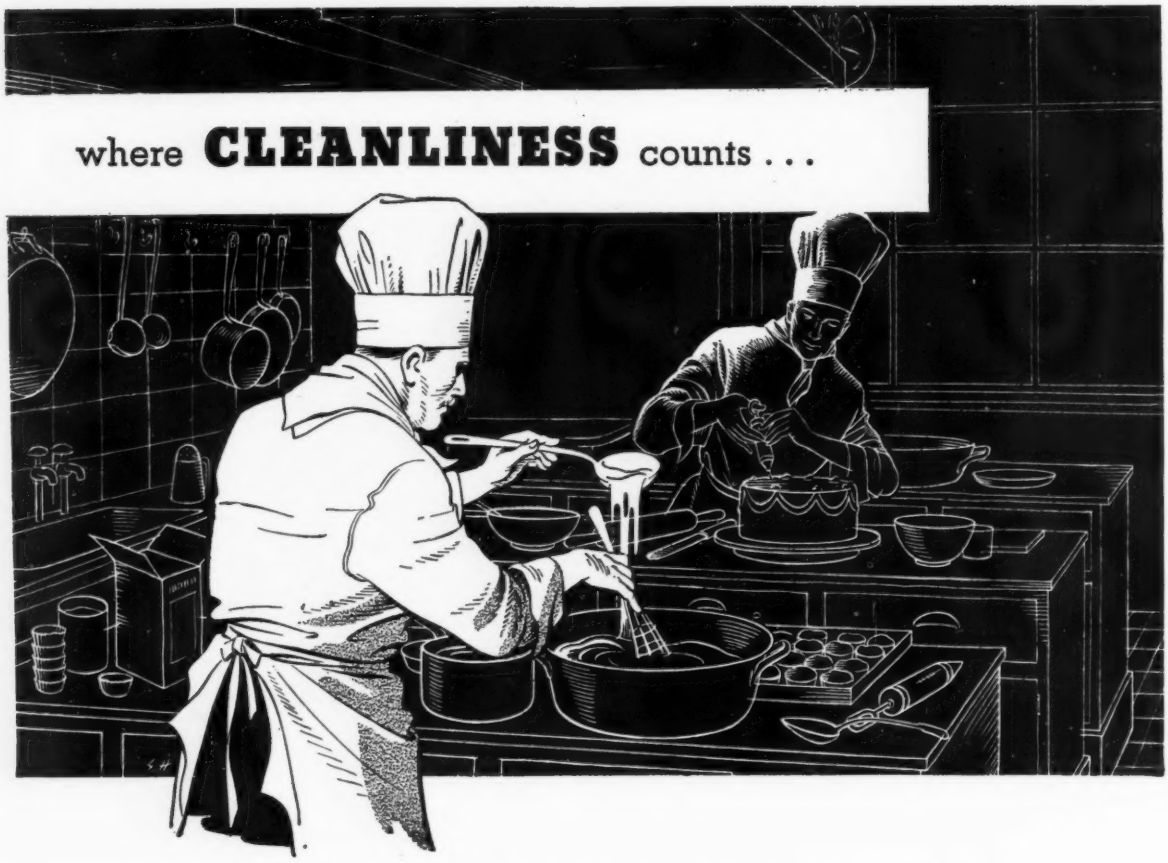
Above left, Fig. 8. Progress photograph showing the effect of cladding the space frames. The horizontal bars on the flat roof between frames are fluorescent lamps. Above, Fig. 9. Progress photograph showing roof structure of a gymnasium and the monitor lights of the adjoining changing rooms. Note the opening lights in the clerestorey above the junction with the monitor. Left. Fig. 10. Plan of gymnasia. Bottom left, Fig. 11. Half section through space frame showing the roof structure and the suspended edge beam supporting the low level roof.



been contrived by roofing consecutive bays from the tops and bottoms of the trusses and fully glazing the change in roof level. The design of the truss has been influenced by the need for daylight and the desire for the minimum of interference from cross bracing.

DESIGN OF THE TIMBER STRUCTURE

The gymnasium trusses span 36 ft., are 3 ft. 6 in. deep, and have top and bottom booms, each made from two 7-in. by 1¼-in. African mahogany boards with a 1¼-in. gap between them. The boards are cut in lengths of not more than 13 ft. and spliced with timber splice plates. They are secured, as are all the junctions in these trusses, with ¾-in. bolts and standard split-ring connectors. The struts and ties, arranged in Warren Girder pattern, have junctions every 6 ft. along the booms. The ties are made from single planks and the struts from double, with packing pieces nailed between them for extra stiffness.



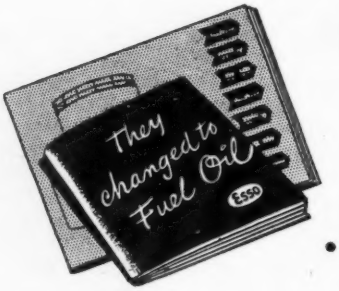
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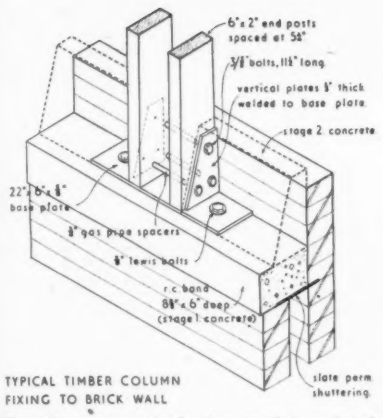


Fig. 12. Axonometric showing the fixing of timber columns.

The low level trusses, which span 19 ft. and are 4 ft. 2 in. deep, are not fully triangulated frames, and therefore by definition are not orthodox trusses. Their top booms are composed of two 6-in. by 2-in. and their bottom booms of two 12-in. by 2-in., both with a 1¼-in. gap. There are two vertical posts, each from 4-in. by 1¼-in. members, which are situated at about one-third span points. The posts are bolted top and bottom and have rounded bases, sheathed with mild steel plates, around which a continuous ⅝-in. mild steel bar ties them to the ends of the top boom (see diagram).

The columns are constructed from two 6-in. by 2-in. posts spaced at 5½ in. At their heads and bases they form the end posts to the high and low level trusses, their bases being bolted into mild steel shoes. These column shoes consist of two 9-in. by 5½-in. by ½-in. vertical plates, 5½ in. apart, and welded to a 22-in. by 6-in. by ½-in. horizontal plate. The shoe flanges are bolted with two ⅞-in. diameter, 5-in. long, Lewis bolts, into the reinforced coping over all the load-bearing brick walls. These bands are constructed in two stages: a 6-in. thickness of reinforced concrete is laid on top of the brickwork, and it is into this that the column shoes are bolted. When the columns and shoes are in position, the second stage concrete, the section of which follows the profile of the vertical shoe plate, is laid between the outer faces of the column and so encases the flanges of the shoes.

The London stock load-bearing brick walls

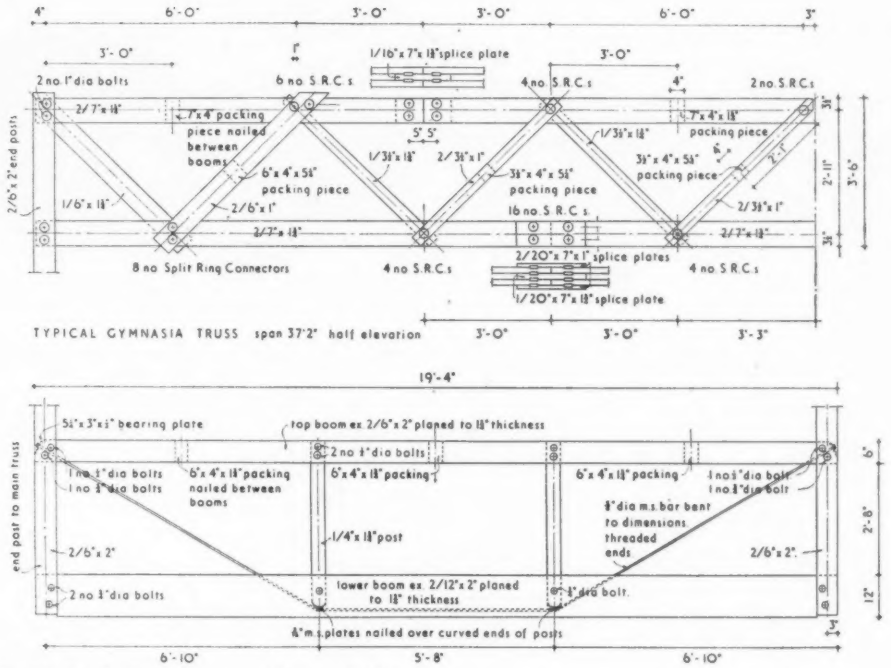


Fig. 13. Details of timber trusses used in gymnasia block.

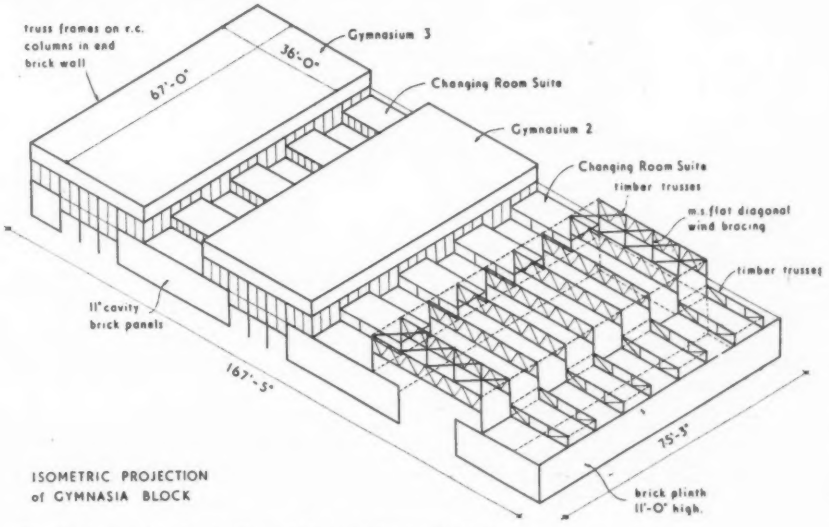
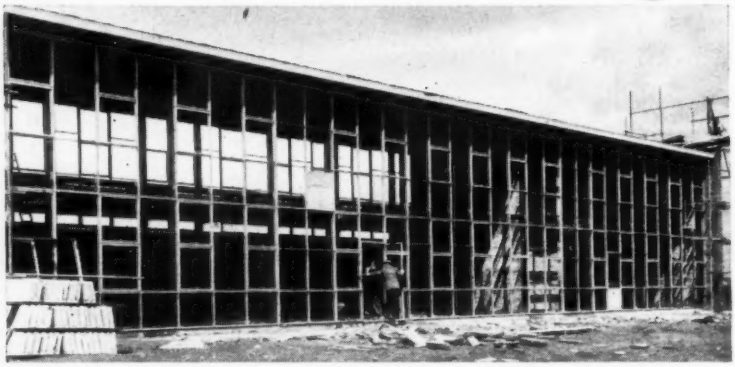
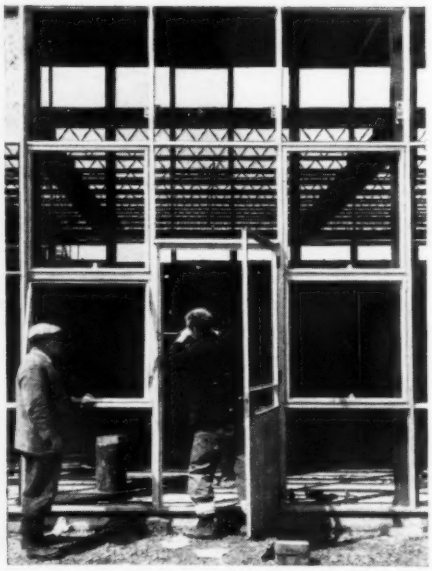


Fig. 14. Axonometric showing the roof planning of gymnasia block.

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County Architect for Worcestershire

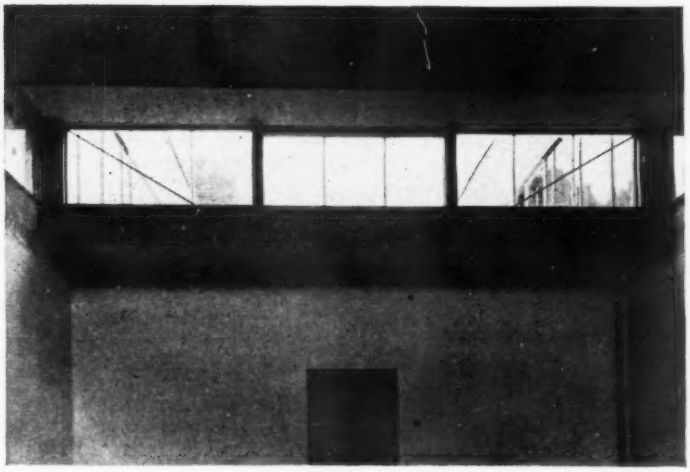
ANOTHER SCHOOL WHERE THE ENTIRE FAÇADE OVER 100 FT. LONG IS CLOTHED IN HOPE'S WINDOGRID. INSULATING PANELS WILL MASK THE FLOOR LINE, GIVING A PATTERNED SURFACE TO THE WHOLE ELEVATION

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are of 11-in. cavity for external walls and 9-in. solid internally. Standard wire cavity ties were used, spaced at 3-ft. centres horizontally and vertically staggered at every sixth course. The gymnasium wall with no adjoining low level suite has 9-in. by 8-in. reinforced concrete columns, set internally at timber column centres against the outer skin. The cavity has been increased to 3½ in. in order to keep the inner skin flush. The walls sit on unreinforced strip concrete foundations, mostly of 1-ft. depth and with a 1 : 8 concrete mix. The floor slab is a 4-in. thickness of 1 : 2 : 4 concrete on 3 in. of 1 : 12 blinding mix, the heating in this group being by means of radiant hot-water panels fixed to the walls.

Fig. 15. Progress photograph showing clerestorey in changing rooms. Note the use of a m.s. bar in place of timber bracing to minimise light obstruction.

THE INDUSTRY

From the Industry this week Brian Grant reports on a new water repellent, a booklet on timber from South East Asia, a fused plug and a solid fuel heater.

WATERPROOFING TREATMENT

It is by now well known that products containing silicones have, amongst other things, very high resistance to water absorption. Messrs. Solignum have produced a silicone base water repellent which is marketed under the name of Impervion. It can be used on concrete, brick, stone, plaster and asbestos cement, and as it is colourless it does not alter the appearance of the surface to which it is supplied. In addition to its repellency, Impervion also helps to prevent damage from frost and chemical fumes, it reduces efflorescence and also keeps the surface cleaner by reducing the amount of soot and dust absorbed.

The material should be applied very liberally (by brush or spray) to surfaces which have preferably been dry for three or four days and when weather conditions can be expected to remain dry for six hours after application. Full water repellency is reached after about 24 hours, but if the surface is very rough a second coat can be applied after an interval of 12 hours. Covering capacity varies from 100 to 200 square feet per gallon. (*Solignum Ltd., Donington House, Norfolk Street, Strand, London, W.C.*2.)

TIMBERS OF SOUTH-EAST ASIA

An addition has recently been made to the TDA's series of Red Booklets. This deals with the timbers of South-East Asia and is a companion volume to the two existing ones which deal with the timbers of West Africa and of South America. The new booklet describes some 40 timbers which are of interest to the British market and contains notes on their uses, properties, working qualities and the kiln schedules recommended by the Forest Products Research Laboratory. Not all the timbers listed are, as yet, available on the British market, but it is interesting to note that teak supplies are described as "adequate to meet any demand likely to arise." Copies of the booklet are obtainable free of charge from the *Timber Development Association at* 21, *College Hill, London, E.C.*4.

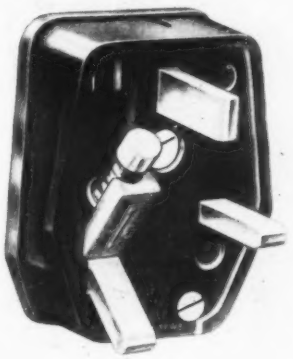
PLUGS AND SOCKETS

The photograph on the right shows a fused plug suitable for sockets made to B.S. 1363. Fuse replacement is particularly easy as it is only necessary to press down on the live pin which then swings forward carrying with it the blown fuse. Replacement takes only a few moments and does not need any tools.

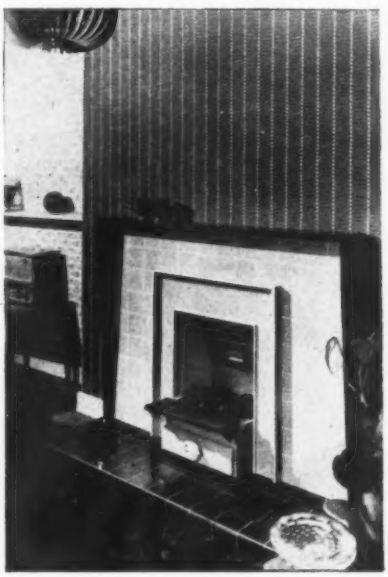
The same firm also produces fuse plugs for use with three-phase industrial equipment. The plugs are strongly constructed of tough moulded rubber and have a special locking device which allows the plug to be locked into the socket so that withdrawal is impossible except for an authorized person. Fuses rated at from 3 to 13 amps. are available for the pins, and in the sockets all phase contacts are automatically shuttered when the plug is withdrawn. (*D.S. Plugs Ltd., Ordsal Electrical Works, Manchester,* 5.)

SOLID FUEL HEATING

The Marvec fire and boiler, recently introduced by Allied Ironfounders, is designed to produce full heating of rooms up to 2,250 cu. ft. and domestic hot water, or full heating up to 1,750 cu. ft. plus background warmth by convected air for rooms up to a further total of 2,000 cu. ft. again with domestic hot water. Alternatively, the boiler may be used to heat two or three radiators with a surface up to 45 sq. ft. The fire has a restrictable throat to control the rate of ventilation and overnight burning on coke or coal is possible with the aid of an extension piece, which can also be used as a trivet. The maximum continuous boiler output is 9,000 BTU's per hr. and the boiler itself can be disconnected and removed through the front of the fire for cleaning. (*The Forth & Clyde & Sunnyside Iron Companies Ltd., Falkirk, Stirlingshire.*)



Above, the D.S. "King-pin" fused plug showing how the hinge pin swings the fuse outward for changing. Below, the Marvec fire with boiler and trivet extensions.



Readers requiring up-to-date information on building products and services may complete and post this form to the Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1

ENQUIRY FORM

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Please ask manufacturers to send further particulars to :—

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PROFESSION or TRADE

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ADDRESS

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18.8.55

Announcements

PROFESSIONAL

Mr. Charles E. Bantin, A.R.I.B.A., DIP.T.P. (Lond.) has commenced practice at 16a, Kenton Park Parade, Kenton, Middlesex, where he will be pleased to receive trade catalogues, etc.

Mr. Kenneth Wood, A.R.I.B.A., A.M.I.S.E., Chartered Architect and Design Consultant, has moved to Merton House, Vine Road, Hampton Court, East Molesey, Surrey, telephone number: MOLesey 2530.

Messrs. Skinner, Bailey & Lubetkin, Architects, have moved to 58, Queen's Gardens, W.2, telephone: PADdington 1637/8.

TRADE

A new film on Sliding and Folding Doors is available on free loan from Messrs. E. Hill Aldam & Co. Ltd., Britannic Works, Haslemere Avenue, S.W.18; it is a 16 mm colour/sound production lasting 40 minutes approximately, and not suitable for silent projectors.

The Brightside Foundry & Engineering Co. Ltd. have formed a new subsidiary company, Brightside Heating & Engineering Co. Ltd., to deal with heating, air treatment and pipework. The Chairman is Mr. Ambrose Firth, the Directors, Mr. T. C. Firth, Mr. W. S. Richards, and Mr. W. B. James.

Messrs. Corrosion Proof Products Ltd. have moved to offices at Sunleys Island, Great West Road, Brentford, Middlesex, telephone number EALing 8243 (3 lines) and telegraphic address, Corroproof, Brentford, Hounslow.

Messrs. Cassidy, Farrington & Dennys have moved to 139a, Kensington High Street, W.8, telephone number WEStern 6156, and will be pleased to receive trade catalogues relating to schools.

From August 22 the address of The Council of Industrial Design will be 28 Haymarket, S.W.1., telephone number TRAfalgar 8000. From August 15 to 26, when the move is taking place, visitors are advised to ask by telephone the whereabouts of the department required.

Messrs. Rhodes Chains Ltd. have opened an office at Carlisle House, 8, Southampton Row, W.C.1, telephone number CHAncery 9377/8; the Registered Office remains at Beacon House, Kingsway, W.C.2.

In the firm of Messrs. McKechnie Brothers Ltd., Mr. W. D. McKechnie has been appointed Sales Manager (Lithopone) with effect from 1st August, 1955.

Mr. A. J. Harris has relinquished his appointment as Director of the Pre-Stressed Concrete Co. Ltd. and is now established in private practice.

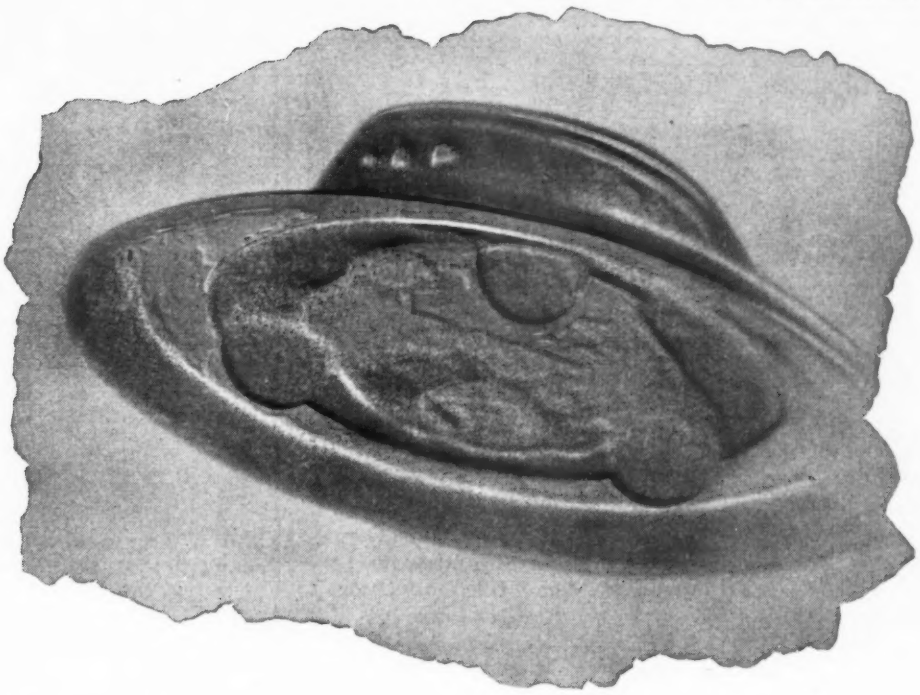
Corrections

We are sorry that we stated, in last week's issue, that J. Murray Easton was the assessor for Ascot's exhibition stand competition. The assessor was, in fact, C. L. S. Mardall.

In the issue of the JOURNAL for June 2, we omitted to mention that the house illustrated on page 762 was executed by Howorth Walker & Liley to a design by Kenneth W. Bland, A.R.I.B.A., of Epsom.

In our issue of August 4, page 160, the ceiling type of the Secondary School at Worthing was incorrectly described: "Asbestos-wood strips" should have read "asbestos insulation board strips."





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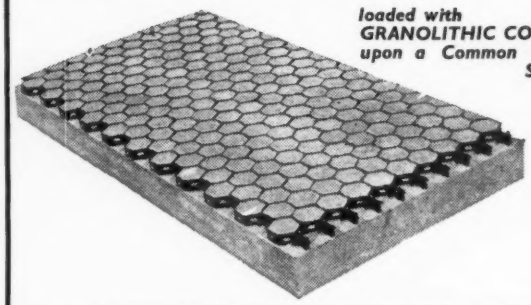
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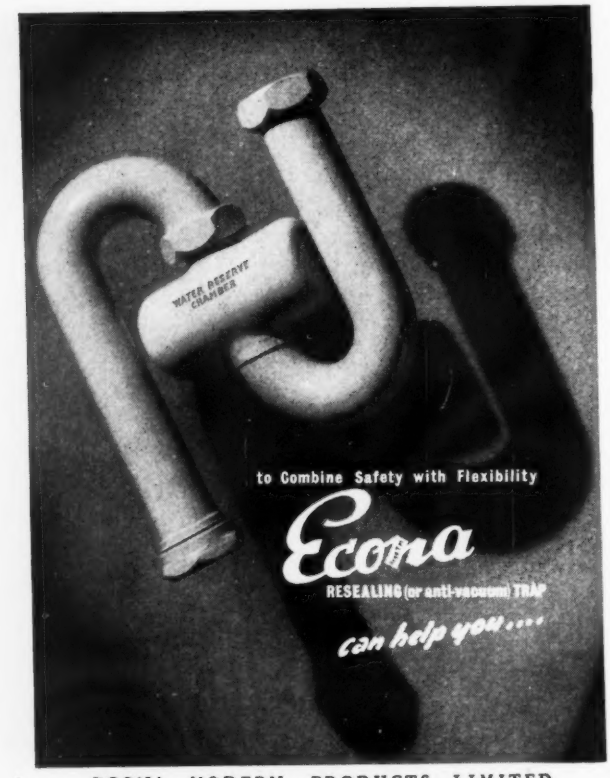
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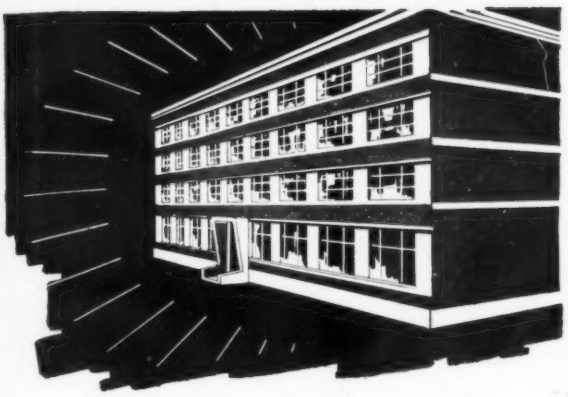
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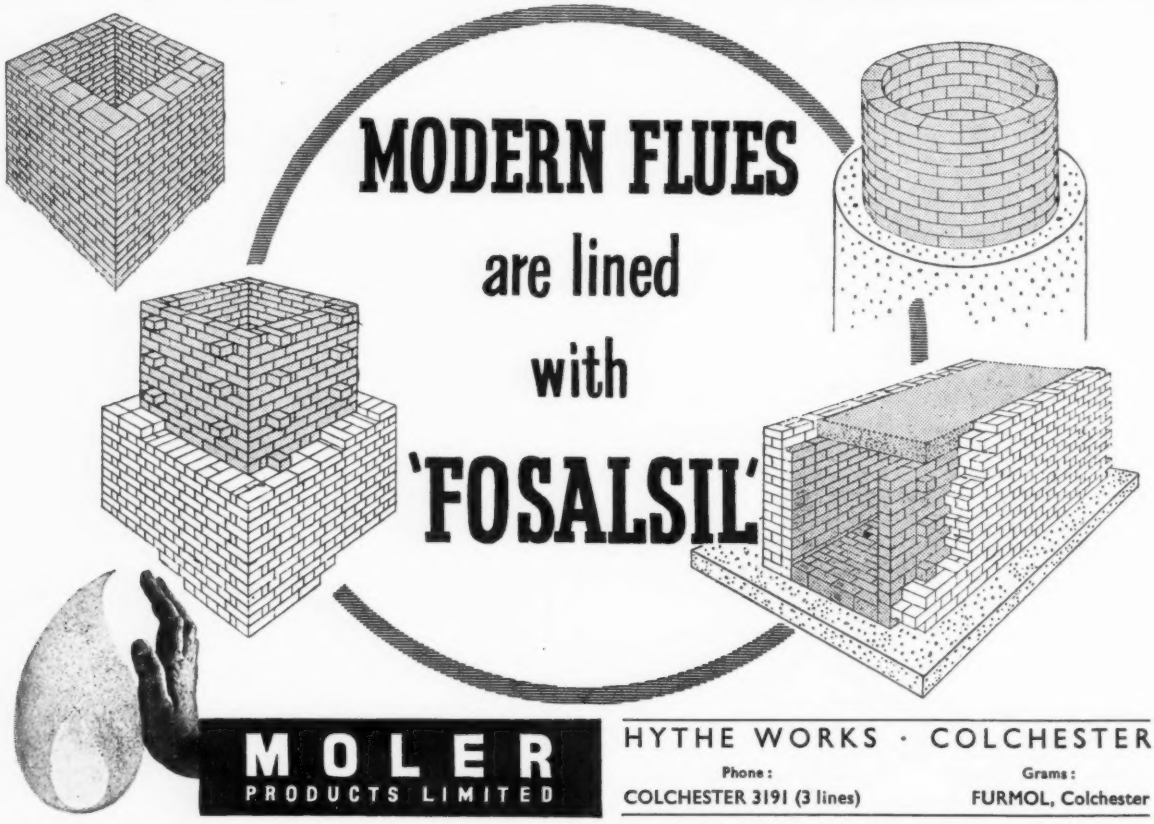
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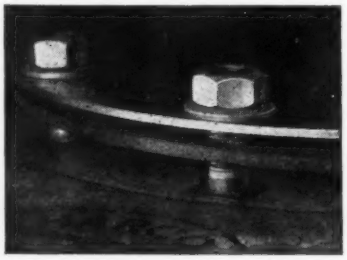
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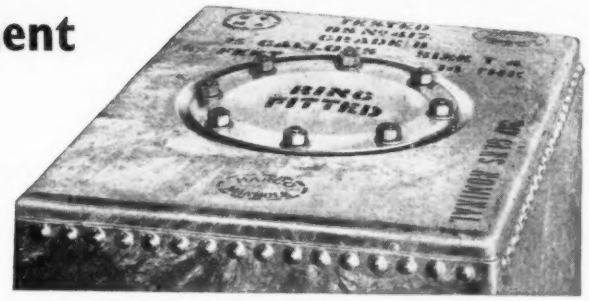
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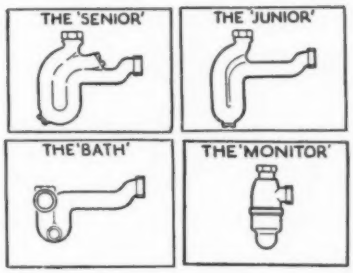
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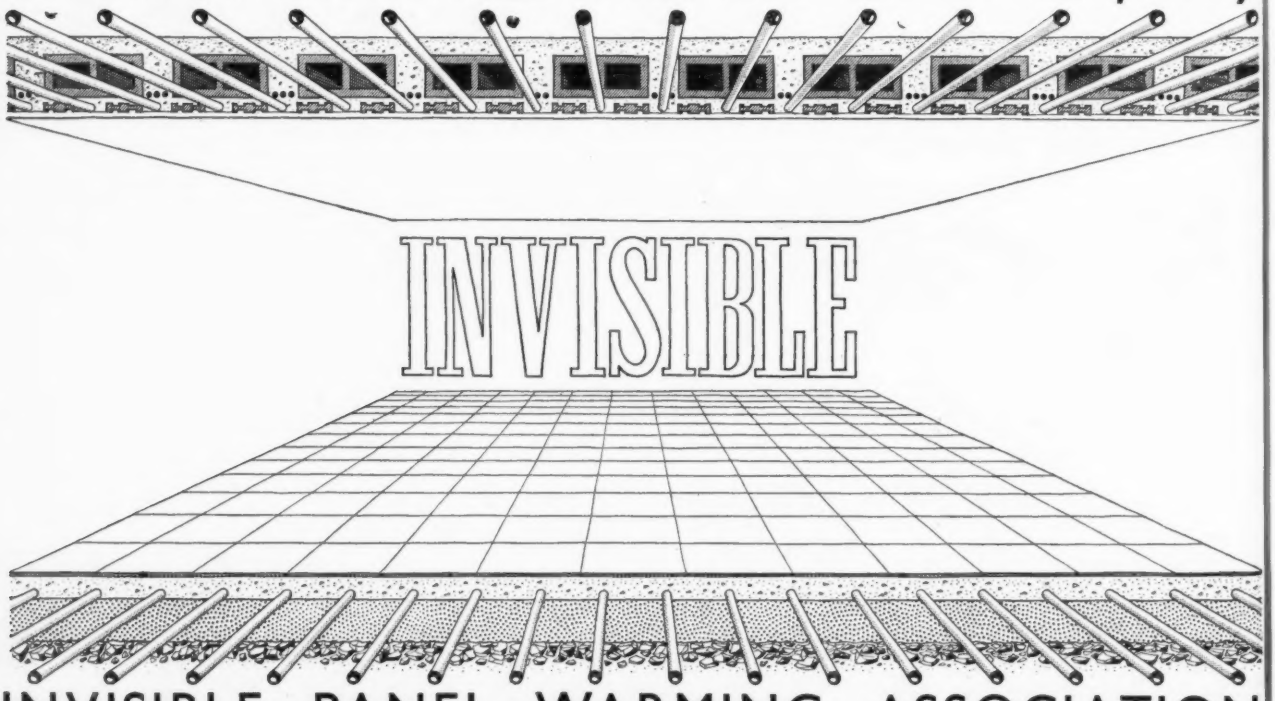
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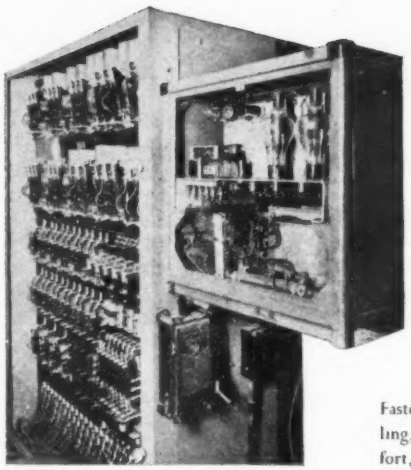
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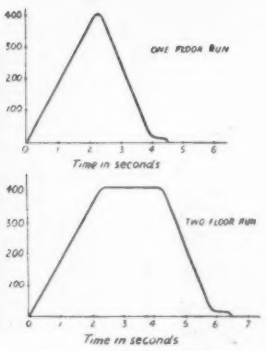


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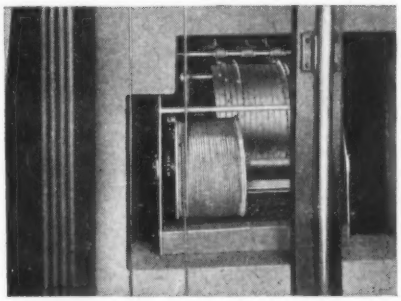


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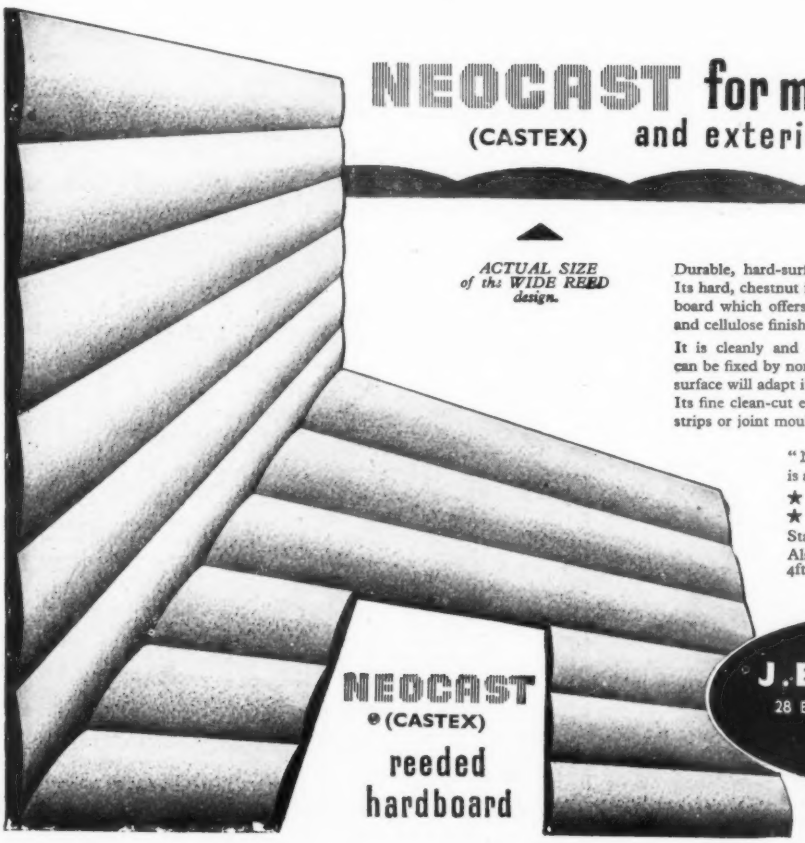
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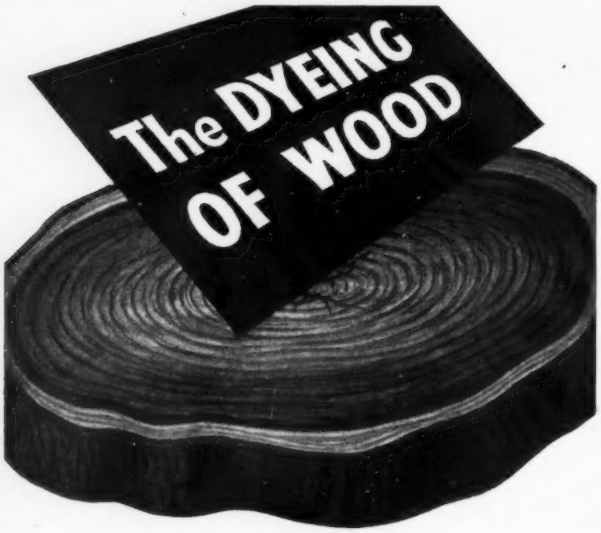
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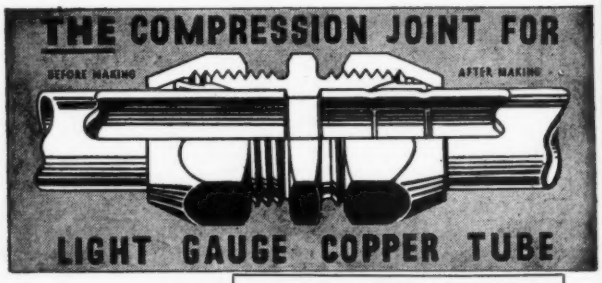
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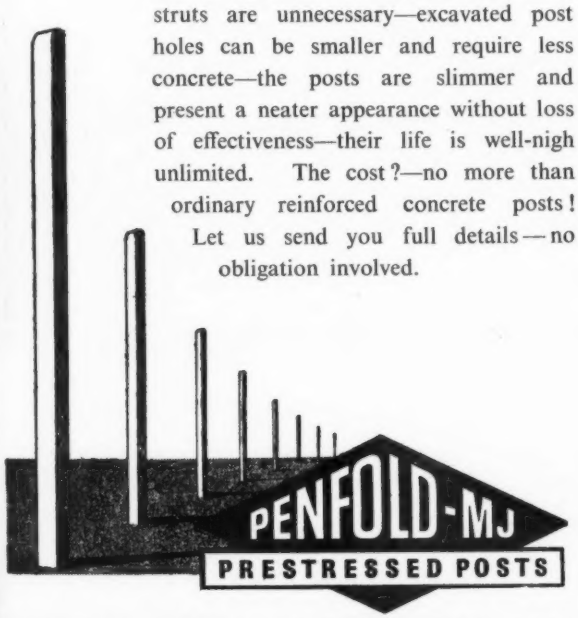
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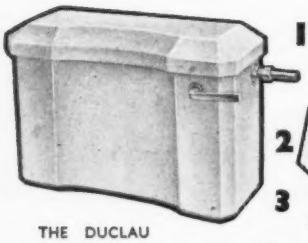
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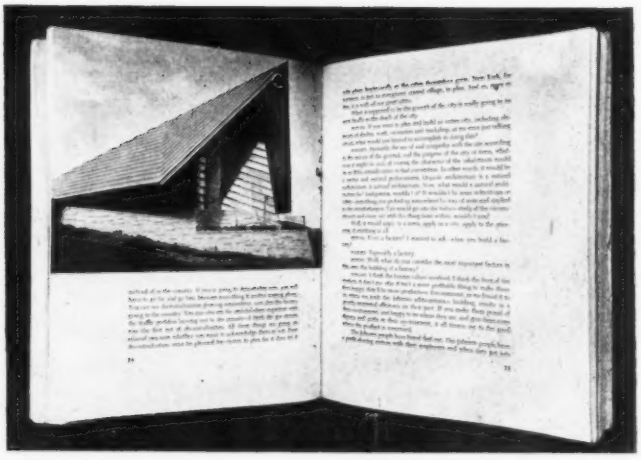
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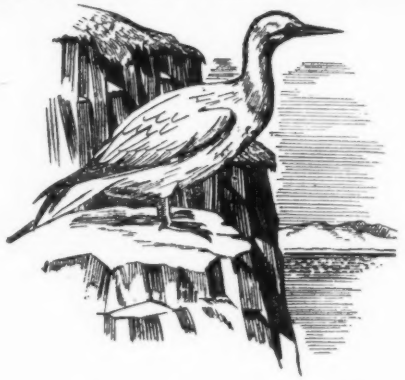
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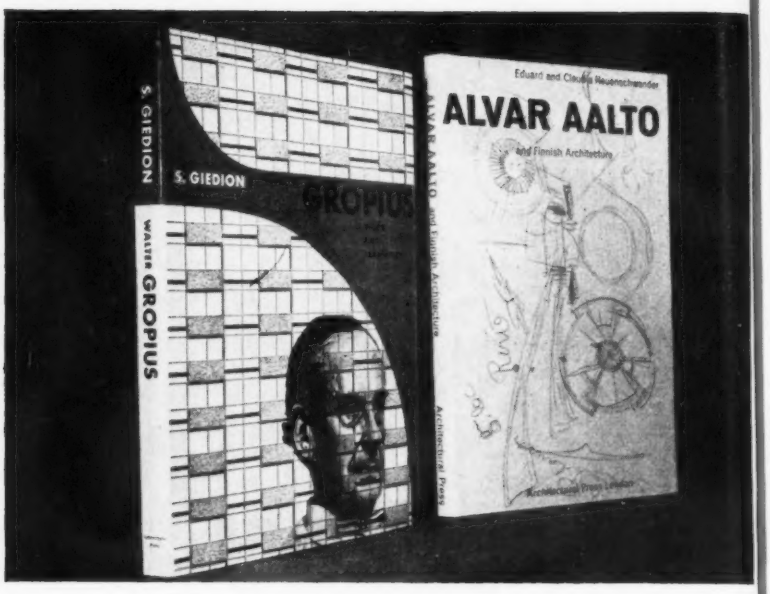
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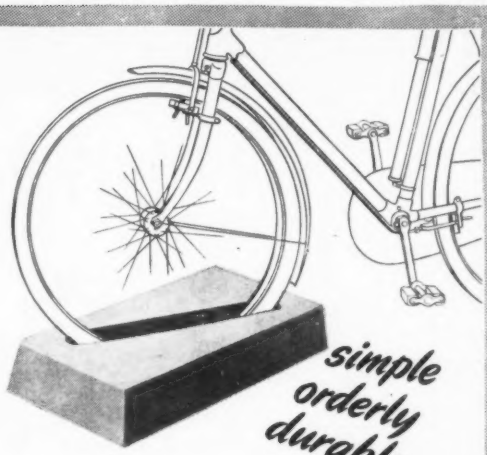
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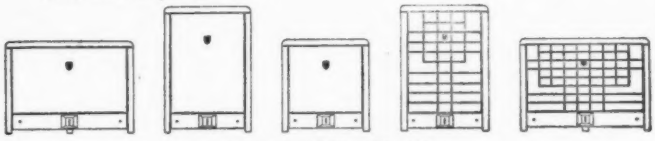
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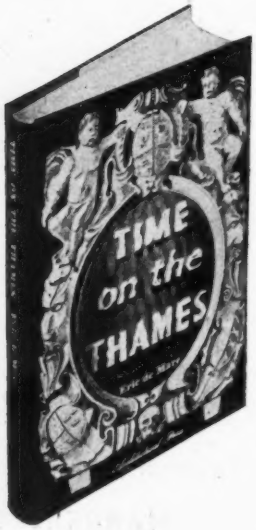
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BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for an ARCHITECTURAL ASSISTANT, established staff.

Salary: Grade A.P.T. I (£500 to £580 per annum, London weighting additional). Applicants should have attended a full-time course of Architecture and have passed the R.I.B.A. Intermediate Examination or its equivalent; experience in Municipal architectural work an advantage. The appointment is subject to the National Scheme of Conditions of Service, provisions of the Local Government Superannuation Acts, and a satisfactory medical report. Applications, endorsed "Architectural Assistant," stating age, qualifications, former Local Government service, present and previous appointments and experience, length of notice required to terminate present appointment, the names of three referees, must be forwarded to the Borough Engineer and Surveyor by 29th August, 1955. Candidates must disclose in writing to the undersigned if to their knowledge they are related to any member or senior officer of the Council. Canvassing disqualifies.

FRANCIS J. O'DOWD,
Town Clerk.

Town Hall, Wimbledon, S.W.19. 2244

CWMBRAN DEVELOPMENT CORPORATION.
APPOINTMENT OF ASSISTANT ARCHITECTS.

Applications are invited for two superannuable posts as Assistant Architects in my Department.

The salary range will be £760 × £25—£885 p.a., and the commencing salary will be in accordance with the qualifications and experience of the successful candidates.

Applicants must be Associates of the R.I.B.A. with not less than four years' office experience, and should have had good experience in house design, construction and layout.

Housing accommodation will be made available in suitable cases, or otherwise lodging expenses, in accordance with the Corporation's scale, will be paid to married men for a limited period.

Applications, stating age, experience, details of present and former employment (together with applicable salaries) and the names and addresses of two referees, must reach the undersigned by first post on 1st September, 1955.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria Street, Cwmbran, Mon.
3rd August, 1955. 2245

BOROUGH OF HARROW.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the under-mentioned appointments in the Department of the Borough Engineer and Surveyor (Mr. J. H. Melville Richards, A.M.I.C.E., M.I.Mun.E.):—

(*a*) ARCHITECTURAL ASSISTANT. A.P.T., Grade II (£560—£640 per annum, plus London "weighting").

(*b*) ARCHITECTURAL ASSISTANTS (TWO). A.P.T., Grades I/II (£500—£640 per annum, plus London "weighting").

(*c*) ARCHITECTURAL TRAINEE. Higher General Division (£170 (at age 15)—£475 per annum, plus London "weighting"). Commencing salary according to age.

Each appointment will be subject to the provisions of the Local Government Superannuation Acts; the passing of a medical examination and the National Joint Council's Scheme of Conditions of Service.

The Council is unable to assist in obtaining housing accommodation for the successful candidate.

Forms of Application may be obtained from the undersigned, to whom they should be returned not later than Monday, 29th August, 1955.

D. H. PRITCHARD,
Town Clerk.

Council Offices, Harrow Weald Lodge,
Harrow, Middx. 2187

URBAN DISTRICT COUNCIL OF WELLINGBOROUGH.
ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade II of the A.P. and T. Division of the National Scales (£560—£640 per annum).

Applicants should have had general architectural experience (with particular reference to housing), and should be good draughtsmen, possess a sound knowledge of building construction, and be capable of preparing working drawings and details under supervision.

Housing accommodation will be provided if required.

The appointment is subject to the Local Government Superannuation Acts and the National Scheme of Conditions of Service. The successful candidate will be required to pass a medical examination.

Applications, giving particulars of experience and qualifications, the names of two persons to whom reference can be made, must be sent to the Engineer and Surveyor, Council Offices, Swanspool, Wellingborough, by 31st August, 1955.

W. G. PALMER,
Clerk of the Council.

Council Offices, Swanspool, Wellingborough.
28th July, 1955. 2170

COUNTY BOROUGH OF SOUTHEND-ON-SEA.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following established posts:—

SENIOR ASSISTANT ARCHITECT. Salary: £750 × £30—£900.

ASSISTANT ARCHITECT. Salary: £600 × £25—£725.

ARCHITECTURAL ASSISTANT. Salary: £560 × £20—£640.

ASSISTANT QUANTITY SURVEYOR. Salary: £600 × £25—£725.

ASSISTANT QUANTITY SURVEYOR. Salary: £675 × £30—£825.

DRAUGHTSMAN. Salary: £500 × £20—£580.

MAINTENANCE SURVEYOR. Salary: £560 × £20—£640.

(With practical knowledge of building construction and experience in measuring and estimating for repairs and maintenance work).

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and the N.J.C. Scheme of Conditions of Service so far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two persons to whom reference can be made, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith.

ARCHIBALD GLEN, *Town Clerk.*
2176

CWMBRAN DEVELOPMENT CORPORATION.
APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the above superannuable post in my Department, which carries a salary range of £760 × £25—£885 per annum. The commencing salary will be in accordance with the qualifications and experience of the successful candidate.

Applicants must be Chartered Quantity Surveyors, and be fully experienced in taking-off, billing and abstraction, site measurement, valuation of work, and preparation of final accounts.

Housing accommodation will be made available in suitable cases, or otherwise lodging expenses, in accordance with the Corporation's scale, will be paid to married men for a limited period.

Applications, stating age, experience, details of present and former employment (together with applicable salaries), and the names and addresses of two referees, must reach the undersigned by first post on 1st September, 1955.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria Street, Cwmbran, Mon.
3rd August, 1955 2246

BUCKS COUNTY COUNCIL.

Applications are invited for the following appointments on the staff of the County Architect:—

(*a*) BUILDING MAINTENANCE SURVEYOR.—Salary in accordance with A.P.T. Grade III, £600—£725 p.a. Applicants should possess a sound knowledge of all building trades, should have had considerable experience in a similar capacity with a local authority, and should preferably possess some recognised professional qualification. The successful applicant will be required to reside and work in the Slough area.

(*b*) JUNIOR ARCHITECTURAL ASSISTANT.—Salary in accordance with A.P.T. Grade I, £500—£580 p.a. Applicants should have passed the R.I.B.A. Intermediate Examination.

The appointments are superannuable and subject to medical examination.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms to be obtained from F. B. Pooley, County Architect, County Offices, Aylesbury, must be returned by 31st August, 1955. 2334

CITY OF SALFORD.
TECHNICAL STAFF.

Applications are invited for the under-mentioned appointments to the permanent establishment of the City Engineer and Surveyor's Department:—

(*a*) TWO ARCHITECTURAL ASSISTANTS. A.P.T., Grade IV (£675 to £825).

(*b*) ONE ASSISTANT QUANTITY SURVEYOR. A.P.T., Grade IV (£675 to £825).

Candidates should possess qualifications as under:—

(*a*) Professional Associates of the Royal Institute of British Architects, and have had good experience in the design and construction of schemes for houses, flats, schools and public buildings.

(*b*) Professional Associates of the Royal Institution of Chartered Surveyors (Quantities Section).

The appointments are pensionable and subject to the passing of a medical examination.

Applications, stating age, qualifications and experience, together with names and addresses of two referees, should be addressed to the City Engineer and Surveyor, Town Hall, Salford, 3, appropriately endorsed, and be delivered not later than Wednesday, 7th September, 1955.

Applicants must disclose, in writing, any known relationship to members or officers of the Council.

R. RIBBLESDALE THORNTON,
Town Clerk.
2220

EAST RIDING OF YORKSHIRE COUNTY COUNCIL.

Applications are invited for the following permanent appointments on the staff of the County Architect:—

(*a*) ASSISTANT ARCHITECTS, Grade V (£750—£900). Must be Associate Members R.I.B.A.

(*b*) ASSISTANT ARCHITECT, Grade II (£560—£640).

(*c*) ASSISTANT ARCHITECT, Grade I (£500—£580).

(*d*) STRUCTURAL ENGINEER, Grade IV (£675—£825). Should be Associate Member of the Institute of Structural Engineers, or have a similar professional qualification.

(*e*) ASSISTANT HEATING AND ELECTRICAL ENGINEER, Grade III (£600—£725).

(*f*) ASSISTANT CHIEF BUILDING SURVEYOR, Grade III (£600—£725).

(*g*) ASSISTANT QUANTITY SURVEYOR, Grade II (£560—£640).

The appointments are superannuable and subject to the passing of a medical examination.

Applications, giving particulars of age, training, qualifications, experience, past and present appointments stating salaries, together with the names of three referees, should be addressed to the County Architect, County Hall, Beverley, and must be received by him not later than Friday, 9th September, 1955.

THOMAS STEPHENSON,
Clerk of the Council.

County Hall,
Beverley.
August, 1955. 2302

COUNTY BOROUGH OF BARROW-IN-FURNESS.
BOROUGH ENGINEER AND SURVEYOR'S DEPT.
APPOINTMENT OF CHIEF ARCHITECT.

Applications are invited from qualified Architects with wide Municipal experience for the post of Chief Architect on Grade A.P.T. VII (£900—£1,100 per annum). The commencing salary will be fixed within the grade.

A car allowance in accordance with the N.J.C. Scales will be paid.

It is possible that the Council will allocate a Corporation house subject to the merits of the case being satisfactory to the interviewing Committee.

Full details of the post, conditions of appointment and application forms, may be obtained from the Borough Engineer and Surveyor, to whom completed forms must be returned not later than Monday, 5th September, 1955.

LAWRENCE ALLEN,
Town Clerk.

Town Hall, Barrow-in-Furness. 2232

COUNTY BOROUGH OF EAST HAM.
HOUSING DEPARTMENT.
ARCHITECTURAL ASSISTANT (A.P.T. II).

Applicants should have passed the Intermediate Examination of the R.I.B.A., and have had experience in the detailing of flats and houses. Salary £560×£20—£640 per annum, plus London weighting.

Further details and form of application (returnable by 29th August, 1955) from the Town Clerk, Town Hall, East Ham, E.6. 2216

LIVERPOOL REGIONAL HOSPITAL BOARD.

Applications invited for the following temporary appointments in the Department of the Regional Architect, in connection with the design and construction of a new 1,000 bedded Mental Deficiency Hospital:—

ASSISTANT ARCHITECT: Salary scale £640 ×£25 (4) × £30 (4) × £35 (2) to £930 p.a.

DRAUGHTSMAN: Salary scale £390 at age 21 or over (less £20 for each year below that age) × £20 (2) × £25 (6) to £580 p.a.

The starting salary in each case dependent on age and experience.

The appointments will be terminable by three months' notice on either side.

Applications stating age, experience, qualifications, present and past appointments and salary, and names and addresses of three referees (two technical) to me by 30th August, 1955.

VINCENT COLLINGE,
Secretary to the Board.

19, James Street,
Liverpool, 2.
363/4/AC.MB.
August 3rd, 1955. 2269

BOROUGH OF BRIDGWATER.
BOROUGH ARCHITECT'S DEPT.

Applications are invited for the following permanent appointments:—

(*a*) ASSISTANT ARCHITECT. Special Class (£650×£25—£775).

(*b*) ARCHITECTURAL ASSISTANT. A.P.T. I (£500—£580).

Applicants for (*a*) must be A.R.I.B.A. and (*b*) Inter. R.I.B.A., with good experience in Housing and General Works.

Housing accommodation will be considered.

Appointments are subject to medical examination, provisions of Local Government Superannuation Acts 1939-53, and one month's written notice either side.

Applications, stating age, education, experience, with the names of two referees, should be sent to the Borough Architect, Town Hall, Bridgwater, not later than 31st August, 1955.

H. A. CLIDERO,
Town Clerk.

Town Hall, Bridgwater.
July, 1955. 2179

ARCHITECTURAL ASSISTANTS (unestablished) required by Stepney M.B.C. Salary up to £855 p.a., according to qualifications and experience. Apply Borough Engineer, 227, Commercial Road, E.1. 2317

COUNTY BOROUGH OF ROCHDALE.

Applications are invited for the following appointments in the Borough Surveyor's Department.

1. SENIOR ASSISTANT ARCHITECT at a salary of £675 rising by annual increments of £30 to £825 per annum.

2. ASSISTANT QUANTITY SURVEYOR at a salary of £650 rising by annual increments of £25 to £775 per annum.

Both appointments will commence at a salary above the minimum, according to qualifications and experience.

Appointments will be subject to the provision of the Local Government Superannuation Act and to the selected candidate passing a Medical Examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications stating age, qualifications and full particulars of experience together with the names and addresses of two persons to whom reference may be made and endorsed "*Senior Assistant Architect*" or "*Assistant Quantity Surveyor*," must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Monday the 5th September, 1955.

K. B. MOORE,
Town Clerk.

2321

COUNTY BOROUGH OF ROCHDALE.

Applications are invited for the post of ASSISTANT ARCHITECT in the Housing Section of the Borough Surveyor's Department, at a salary of £650—£775 per annum, commencing at a figure according to experience.

Applicants must have passed Parts 1 and 2 of the R.I.B.A final or special final examination. Applications will be considered from candidates not so qualified, the salary to be commensurate with qualifications.

The appointment will be subject to the provisions of the Local Government Superannuation Act and to the selected candidate passing a medical examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications, stating age, qualifications and full particulars of experience, together with the names and addresses of two persons to whom reference may be made and endorsed "*Assistant Architect*" must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Monday, 29th August, 1955.

K. B. MOORE,
Town Clerk.

2322

BOROUGH OF SHREWSBURY.
APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the post of Junior Architectural Assistant on the permanent staff of the Borough Surveyor at a salary in accordance with Grade II (£560—£640) per annum.

Applications including the names and addresses of two referees should be sent to the Borough Surveyor not later than Friday, the 26th August, 1955.

S. R. H. LOXTON,
Town Clerk.

2nd August, 1955. 2262

BEDFORDSHIRE COUNTY COUNCIL.

Applications are invited from suitably qualified ARCHITECTURAL ASSISTANTS for the following vacancies in the County Architect's Department:—

A.P.T. Grade VI (£825 to £1,000 per annum)
A.P.T. Grade II (£560 to £640 per annum)
A.P.T. Grade I (£500 to £580 per annum)

Application forms can be obtained from the County Architect, Shire Hall, Bedford, and should be returned by 31st August, 1955. 2264

OXFORD REGIONAL HOSPITAL BOARD.
REGIONAL ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment:

SENIOR ASSISTANT ARCHITECT (£920× £30 (5)×£25 (1)—£1,095 p.a.).

Particulars of the post and of the qualifications expected may be obtained from the Regional Architect, W. J. Jobson, Esq., A.R.I.B.A. Applications, with the names of two referees, should be submitted to the Secretary of the Board, 43, Banbury Road, Oxford, not later than 3rd September, 1955. 2165

BOROUGH OF NEWCASTLE-UNDER-LYME.

Applications are invited for the post of:—
ARCHITECTURAL ASSISTANT, A.P. & T., Grade II (£560×£20—£640).

Application Forms and Conditions of Appointment may be obtained from the Borough Engineer and Surveyor, Lancaster Building, High Street, Newcastle, Staffs., and should be returned to him not later than Monday, 29th August, 1955.

C. J. MORTON,
Town Clerk.

District Bank House, High Street,
Newcastle, Staffs. 2226

PADDINGTON BOROUGH COUNCIL

Require SENIOR ASSISTANT ARCHITECT within A.P.T. Grade V (£780 × £30—£930 p.a., £10 p.a. less if under age 26 years). Candidates must be A.R.I.B.A. with experience of local authority work, contemporary design and construction of general municipal work including multi-storey flats; supervision of large building contracts and architectural staff; Town Planning experience an advantage.

Applications stating age, qualifications, present and past appointments with dates and salaries, details of experience and names and addresses of three referees should be received by the undersigned by 29th August, 1955 (quoting A.229).

W. H. BENTLEY,
Town Clerk.

Town Hall, Paddington Green, W.2. 2273

AIR MINISTRY Works Designs Branch require in London and Provinces (with liability for overseas service) ARCHITECTURAL ASSISTANTS experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings. Salaries up to £810 p.a. (men) and £706 (women). Starting pay based on age, qualifications, and experience. Paid overtime. Posts non-pensionable with long term possibilities. Natural born British subjects only. Write stating age, qualifications, employment details, including type of work done, to any Employment Exchange, quoting Order No. BOROUGH 2303. 2163

COUNTY BOROUGH OF EAST HAM.
ARCHITECTURAL ASSISTANT—HOUSING DEPARTMENT.

Applicants should have had experience in housing work of a local authority. Salary £650 × £25 —£775 per annum, plus London Weighting.

Further details and form of application (returnable by 7th September, 1955), from the Town Clerk, Town Hall, East Ham, E.6. 2356

COUNTY BOROUGH OF BIRKENHEAD.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited from suitably qualified persons for the post of CHIEF ARCHITECTURAL ASSISTANT Grade A.P.T. VI (£825—£1,000).

Applicants should have had considerable experience in the carrying out of large scale Contracts, the administration and supervision of the various sections of a Local Government Office.

The Appointment is superannuable subject to satisfactory medical examination and to one month's notice on either side.

Closing date for applications—31st August, 1955.

DONALD P. HEATH,
Town Clerk.

Town Hall,
Birkenhead. 2336

NORTH THAMES GAS BOARD.

An ARCHITECTURAL ASSISTANT is required in the Drawing Office of the Chief Engineer's Department, Westminster.

Applicants should have passed the R.I.B.A. Final Examination, should be capable of preparing working drawings and specifications, and supervising the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

Starting salary, depending on age and qualifications, will be within the range £650—£770 per annum, and the successful candidate will be required to join the Staff Pension Scheme.

Applications to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 666/278. 2339

PETERLEE DEVELOPMENT CORPORATION.
CHIEF ARCHITECT'S DEPARTMENT.
ARCHITECTURAL ASSISTANT.

Applications are invited for the above post in the salary range £610 × 50—£710 per annum. Applicants should preferably have passed the Intermediate Examination of the R.I.B.A. and be experienced in preparation of house and layout designs and working drawings.

The post is superannuable and the candidate seleted will be required to pass a medical examination before appointment.

Housing accommodation will be made available if necessary.

Applications, stating age, marital status, present appointment and salary, details of education, qualifications and experience, and the names of two referees should be submitted to me not later than 26h August, 1955.

A. V. WILLIAMS,
General Manager.

Shotton Hall,
Castle Eden,
Co. Durham. 2319

THE CORPORATION OF GLASGOW.
ARCHITECTURAL AND PLANNING DEPARTMENT.
PRINCIPAL ASSISTANT ARCHITECT.

Applications are invited for the above position from suitably qualified persons who have had wide housing experience and have administrative ability. Applicants must be members of R.I.B.A. Salary scale £930 to £1,005 per annum. The appointment will be superannuable, subject to medical examination.

Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,
City Architect and Planning Officer.

2320

BOROUGH OF LUTON.
TECHNICAL STAFF.

Applications invited for:—

(A) SENIOR ARCHITECTURAL ASSISTANTS: Salary, A.P.T. V (£750—£900). Fully qualified; experienced in housing, schools and public buildings.

(B) ARCHITECTURAL ASSISTANTS: Salary, general Division to A.P.T. IV (£170—£825) according to qualifications and experience.

(C) SENIOR QUANTITY SURVEYING ASSISTANTS: Salary, A.P.T. V (£750—£900). Fully qualified with experience of taking off, abstracting and billing for large contracts and settlement of final accounts.

(D) QUANTITY SURVEYING ASSISTANT: Salary, General Division to A.P.T. IV (£170—£825) according to qualifications and experience.

N.J.C. service conditions. Application forms from Borough Engineer, Town Hall, Luton, returnable by 29th August, 1955

In the case of (A) and (C) housing accommodation may be available.

A. D. HARVEY,
Town Clerk.

2305

CANNOCK URBAN DISTRICT COUNCIL.
ARCHITECTURAL ASSISTANT.

Applications are invited for the above-named appointment in the Architect's Department, at a salary within Grade A.P.T. III (£600—£725) or IV (£675—£825) according to qualifications and experience.

HOUSING ACCOMMODATION AVAILABLE TO MARRIED APPLICANTS.

Further particulars and form of application are available from the undersigned.

Closing date 5th September, 1955.

W. C. SPEEDY,
Clerk of the Council.

Council House,
The Green,
Cannock, Staffs.
11th August, 1955 2368

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

The Board is engaged in a large-scale programme of re-building including a new general hospital at Welwyn and following staff are required for Regional Architect's Department :—

ASSISTANT ARCHITECTS. Applicants must be associate members of R.I.B.A. and be experienced in design and construction preferably in hospitals and associated buildings. Salary scale : £640 × £25 (4) ×£30 (4) × £35 (2)—£930 plus London Weighting £20—£40. Commencing salary above minimum may be paid subject to certain conditions.

ARCHITECTURAL ASSISTANT.—Applicants must have passed intermediate examination of R.I.B.A. Persons appointed will give technical assistance to professional officers. Salary scale : £480 × £20 (7) × £25 (2)—£670 plus £20—£30 London Weighting. Commencing salary up to £560 plus weighting may be paid subject to certain conditions.

Apply, stating which post, and giving age, qualifications (with dates) and experience with names of two referees to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 25th August. 2306

CORK CORPORATION.
TEMPORARY GRADE II ARCHITECT REQUIRED.

Applications are invited from fully qualified persons for the position of TEMPORARY ARCHITECT Grade II in the City Architect's Department at a salary of £650 per annum plus temporary bonus (at present 30 per cent).

The appointment shall be for a period of 9 months with the possibility of extension to a maximum of three years, subject to satisfactory service. Experience in housing is desirable.

Applications, giving age, particulars of education, professional qualifications, and experience should reach the undersigned not later than Monday, 5th September, 1955. There is no prescribed application form. Applicants will be required to attend in Cork for interview at their own expense.

Canvassing directly or indirectly will prejudice the interests of applicants.

PHILIP MONAHAN,
City Manager and Town Clerk.

City Hall,
Cork, Eire.
5th August, 1955.

2312

ATOMIC ENERGY RESEARCH ESTABLISHMENT, HARWELL invites applications for the post of SUPERINTENDENT OF WORKS to be responsible for the execution of all building maintenance and minor new constructional work on a large research establishment and on its housing estates. A direct labour force of approximately 170 men is employed and considerable use is also made of contractors.

Applicants should have served a recognised building trade apprenticeship, and should possess Higher National Certificate in Building, or equivalent qualifications. Several years' experience in the organisation and control of labour, the supervision of contractors, the maintenance of completed buildings and in general construction is desirable.

The successful candidate will be appointed with the grade of Technical Class Grade "B" within the salary scale £1,015—£1,120 p.a. He will be required ot join the Authority's contributory superannuation scheme.

Housing accommodation will be available within a reasonable period for the selected officer if he is married and comes from outside the radius of the Establishment's transport facilities.

Request for Application Form should be sent on a Post Card to the Establishment Officer, U.K. Atomic Energy Authority, A.E.R.E. Harwell, Didcot, Berks., quoting 2/103/382. 2283

CORPORATION OF THE CITY OF ABERDEEN.
TOWN PLANNING DEPARTMENT.

Applications are invited for the following posts:—

(*a*) PLANNING ASSISTANT—salary scale £585—£715. Placing according to qualifications and experience.

(*b*) PLANNING DRAUGHTSMAN—salary scale £515—£560.

Further particulars may be obtained from the Director of Town Planning, 5, Bon-Accord Crescent, Aberdeen, by whom applications should be received on or before 5th September, 1955.

J. C. RENNIE.
Town Clerk.

Town House,
Aberdeen. 2304

NATIONAL COAL BOARD.
NORTHERN (N. & C.) DIVISION.
VACANCY FOR ASSISTANT ARCHITECT.

A vacancy has occurred for an ASSISTANT ARCHITECT, in the office of the Divisional Architect, at Gosforth, Newcastle-upon-Tyne, 3, for work of interest and variety in large re-construction schemes. Current projects include workshops, laboratories, offices, pithead baths, fire stations, farms and housing.

An assistant at intermediate stage or recently qualified is required; the commencing salary will be between £525 and £750 per annum, according to qualifications and experience; applications stating age, training and experience, together with details of salary in past and present appointments should be submitted to J. C. Spooner, Esq., A.R.I.B.A., A.R.I.C.S., Divisional Architect, Ashfield Tower, Kenton Road, Gosforth, Newcastle-upon-Tyne, 3, by 31st August, 1955.

2366

BASILDON DEVELOPMENT CORPORATION.
APPOINTMENT OF MAINTENANCE SURVEYORS.

Applications are invited for the established and superannuable posts of MAINTENANCE SURVEYORS on the staff of the Chief Estates Officer (John H. West, F.R.I.C.S.). Applicants should have passed the Final or Intermediate Examination (Building Sub-Division) of the R.I.C.S. or hold an equivalent qualification and must be capable of preparing Specifications and Schedules of Dilapidation, and of supervising the maintenance and repair of buildings, particularly during the contractor's maintenance period. Experience of taking over new buildings from contractors will be an advantage.

Salary within the range of £580—£650 per annum according to qualifications and experience.

Housing accommodation in approved cases.

Applications stating age, education, qualifications, present and previous appointments, with salary and experience in precise terms, and giving the names of two referees, should reach the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, by Wednesday, 31st August. 2362

SWADLINCOTE URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT (TEMPORARY).

Applications are invited for the position of TEMPORARY ARCHITECTURAL ASSISTANT in the office of the Surveyor to the Council. Salary Grade A.P.T. II £560—£640.

Preference will be given to applicants holding the Intermediate Examination of the R.I.B.A.

Applications stating age, training, experience, past and present appoinments, together with the names of two referees should be delivered to the undersigned endorsed "Architectural Assistant" not later than Monday the 5th September, 1955.

Canvassing will disqualify. Candidates must in their application state if to their knowledge they are related to any member or the holder of any senior post under the Council.

HOUSING ACCOMMODATION WILL BE PROVIDED IF REQUIRED.

J. SANDIFORD.
Clerk of the Council.

Clerk's Office,
Swadlincote,
Near Burton-on-Trent.
11th August, 1955. 2367

CARMARTHENSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ASSISTANT ARCHITECTS (two posts) at a salary in accordance with Grade IV. A.P.T. Division (£675×£30—£825).

Candidates should have had experience in the design and construction of modern buildings.

Preference will be given to Associates of the Royal Institute of British Architects.

Applications, stating age, training and experience, accompanied by two recent testimonials, should be submitted to the County Architect, County Hall, Carmarthen, not later than September 3rd, 1955.

W. S. THOMAS.
Clerk of the County Council.

County Hall, Carmarthen.

2293

COUNTY BOROUGH OF BOLTON.
TEMPORARY ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a TEMPORARY ARCHITECTURAL ASSISTANT in the Borough Architect's Department at a salary in accordance with A.P.T. Grade II (£560—£640). Commencing salary will be according to qualifications and experience.

Applicants should have attended a course of Architecture, and have passed the Intermediate Examination of the R.I.B.A. or its equivalent.

Application forms may be obtained from me and should be returned not later than 31st August, 1955.

PHILIP S. RENNISON,
Town Clerk.

Town Hall,
Bolton. 2378

COUNTY BOROUGH OF CARLISLE.

Applications are invited for the following posts in the City Surveyor's Department :

(*a*) ASSISTANT ARCHITECT, A.P.T. IV, commencing salary £765 × £30—£825.

(*b*) ASSISTANT ARCHITECT, A.P.T. IV £675 × £30—£825. Commencing salary according to experience.

Applicants for the above should be A.R.I.B.A.

(*c*) ASSISTANT ARCHITECT, salary scale £651—£775. Applicants to have passed R.I.B.A. final examination or equivalent at recognised School of Architecture and to have at least five years' experience, including period of training.

The above appointments are being made for carrying out the Authority's Educational Building Programme.

(*d*) BUILDING SURVEYOR, A.P.T. III, £600—£725, or special grade £650—£775, salary according to appropriate R.I.C.S. (Building) or equivalent qualification and experience. Applicants should be capable of handling minor building works, alterations, additions, etc..

Housing accommodation available if required.

Forms may be obtained from the City Surveyor, 18, Fisher Street, Carlisle, to whom they should be returned not later than 8th September, 1955.

H. D. A. ROBERTSON.
Town Clerk.

Town Clerk's Office,
15, Fisher Street,
Carlisle. 2371

COUNTY OF LEICESTER.

(*a*) SENIOR ASSISTANT ARCHITECT, £750—£900.

(*b*) SENIOR ASSISTANT ARCHITECT, £675—£825.

(*c*) ASSISTANT ARCHITECTS, £650—£775.

(*d*) ARCHITECTURAL ASSISTANTS, £560—£640.

(*e*) ASSISTANT HEATING ENGINEER, £650—£775.

(*f*) ASSISTANT QUANTITY SURVEYOR, £675—£825.

Candidates for (*a*) and (*b*) must be Registered Architects experienced in design and construction of modern buildings and capable of carrying through projects from inception to completion; for (*c*) must be Registered Architects experienced in preparation of working drawings from sketches and capable of taking charge of smaller contracts; for (*d*) must be of Intermediate standard with some experience; for (*e*) must be capable of designing heating schemes A.M.I.H.V.E. preferred; for (*f*) be qualified, experienced in preparation of bills of quantities, specifications and settling final accounts, A.R.I.C.S. preferred. Apply by 5th September, 1955, on form obtainable from County Architect (*e*), 123, London Road, Leicester. 2346

COUNTY BOROUGH OF WEST HAM.
BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT.

There are vacancies on the permanent staff for :—

(*a*) SENIOR ASSISTANT ARCHITECT—A.P.T. V (£750 × £30—£900).

(*b*) ASSISTANT ARCHITECTS—A.P.T. IV (£675 × £30—£825).

(*c*) ARCHITECTURAL ASSISTANTS—A.P.T. I/II (£500 × £20—£580); (£560 × £20—£640).

(*d*) SENIOR ASSISTANT, PLANNING—A.P.T. IV (£675 × £30—£825), plus London allowance.

Point of entry in salary scale dependant upon qualifications and experience.

Applicants for posts (*a*) and (*b*) should be A.R.I.B.A., or Registered Architect; (*c*) should be Inter. standard with office experience; and (*d*) should be Architect/Planners.

There is an extensive programme of redevelopment and the architectural work includes Housing, Schools and Public Buildings.

Application Forms from Borough Architect and Planning Officer, Thomas E. North, O.B.E., F.R.I.B.A., Dist. T.P., 70, West Ham Lane, Stratford, E.15 (returnable by 6th September, 1955). 2345

COUNTY COUNCIL OF ESSEX.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the post of SENIOR PLANNING ASSISTANT A.P.T. Grade IV (£675—£825) at Romford.

Applicants must have had considerable experience in the preparation of Development Plans and in detailed planning, design and layouts. They must be Corporate Members of the Town Planning Institute or other comparable professional Institute.

Appointment subject to Superannuation and medical examination.

Application forms from County Planning Adviser, Broomfield Place, Broomfield, Chelmsford, to whom they should be returned as soon as possible. Canvassing disqualifies.

8th August, 1955. 2369

URBAN DISTRICT COUNCIL OF CRAYFORD.
SENIOR TECHNICAL ASSISTANT.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Salary within the scale £650—£775 p.a., plus London weighting. Applicants to be qualified A.R.I.B.A., A.R.I.C.S. or A.M.I.Mun.E. Housing available.

Application forms and further particulars from the Engineer and Surveyor, Town Hall, Crayford, Kent. Closing date 29th August, 1955.

G. B. HODGSON,
Clerk of the Council.

2331

LONDON ELECTRICITY BOARD
ARCHITECTURAL ASSISTANT

Applications are invited for the above position in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants for the position should be studying for or have passed the Intermediate Examination of the R.I.B.A., be capable draughtsmen and have had several years' experience in an Architect's office.

The post is graded under Schedule "D" of the National Joint Board Agreement, Grade 5, £672 to £777 per annum, inclusive of London Allowance.

Application forms obtainable from Personnel Officer, 46/7, New Broad Street, London, E.C.2, to be returned completed by 27th August, 1955. Please enclose addressed envelope and quote reference: V/1924/A. 2294

GLOUCESTERSHIRE COUNTY COUNCIL.

ASSISTANT ARCHITECTS required. Qualified Members of R.I.B.A. Grade IV (£675—£825), Grade III (£600—£725 ; £560—£775 if at least five years' experience). Also ARCHITECTURAL ASSISTANTS, Grade II (£560—£640), Inter. R.I.B.A. Appointments open to both male and female candidates. N.J.C. Conditions of Service. Medical Examination.

Apply giving age, experience, present position, salary and date of appointment, previous appointments, names and addresses of two persons for references, County Architect, Shire Hall, Gloucester, by 31st August, 1955.

GUY H. DAVIS,
Clerk of the County Council.

2303

PADDINGTON BOROUGH COUNCIL
require QUANTITY SURVEYOR'S ASSISTANT within salary range £590 to £670 p.a. (£10 less if under 26). Experience in preparation of estimates, working up, abstracting, billing, site measurement and working up to final account stage. Preference to holders of or at standard of, Inter-R.I.C.S. (Qties. Sub-Divn.). Write age, qualifications, present and past appointments and names of three referees, to Town Clerk (A.228) Paddington, W.2, by 29th August, 1955. 2373

LANCASHIRE COUNTY COUNCIL.
PLANNING ASSISTANTS, required at Liverpool within the salary range of £650—£825, depending on qualifications and experience. Applicants should possess a qualification in architecture, surveying, engineering or town planning. Planning experience desirable, but not essential. Applications giving age, qualifications, present appointment, experience, etc., and two referees to the County Planning Officer, East Cliff County Offices, Preston, by 31st August, 1955. 2351

MIDDLESEX COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT.
TOWN PLANNING DRAUGHTSMEN required. Salary APT I (£500 p.a. rising to £580 p.a. plus London Weighting). Duties include preparation of plans and maps. Town Planning experience desirable; preference to students of T.P.I. Established, pensionable subject to medical assessment and prescribed conditions. Application forms from County Planning Officer, 10, Gt. George Street, S.W.1. returnable by 31st August (Quote Q.998 AJ). Canvassing disqualifies. 2298

COUNTY BOROUGH OF BOOTLE.
Applications are invited for the appointment of a TEMPORARY ASSISTANT ARCHITECT, Grade A.P.T. III, £600—£725 per annum.
The appointment will be for a minimum of three years and preference will be given to those having experience in the design and construction of schools.
Application forms are obtainable from the Borough Surveyor, Town Hall, Bootle, to whom they should be returned by 16th September, 1955. 2348

LEEDS REGIONAL HOSPITAL BOARD invites applications for the appointment of SURVEYING ASSISTANT.
Salary scale £480 × £20 (7) × £25 (2)—£670 per annum. Commencing salary according to age and experience. Applicants must have passed the Intermediate Examination of the R.I.C.S. or an examination recognised by the Institution as equivalent.
Applications, giving full particulars, together with the names of two referees, to be forwarded to the Secretary, Park Parade, Harrogate, as soon as possible. 2370

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
Vacancies for ENGINEERING ASSISTANTS in Housing Engineering Division (salary up to £783, according to experience). Applicants should have been trained as Civil Engineers, be proficient in the use of level and theodolite and have had experience in the construction of roads and sewers. Application form, returnable by 24th September, from Architect (AR/EK/HE/4), The County Hall, S.E.1. (1281) 2354

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
Vacancies for ARCHITECTS Grade III (up to £945), and ARCHITECTURAL ASSISTANTS (up to £783), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings. Application forms and particulars from Architect (AR/EK/A/2), The County Hall, S.E.1. (1189) 2136

COUNTY BOROUGH OF EAST HAM.
HOUSING DEPARTMENT—SENIOR ARCHITECTURAL ASSISTANT (A.P.T. IV).
Applicants should have had experience in housing work of a local authority. Salary £675 × £30 —£825 per annum, plus London Weighting.
Further details and form of application (returnable by 7th September, 1955) from the Town Clerk, Town Hall, East Ham, E.6. 2357

METROPOLITAN BOROUGH OF FULHAM.
ASSISTANT ARCHITECT.
Borough Architects' and Housing Department. Salary A.P.T. III/IV £600—£725 : £675—£825, according to qualifications and experience, plus London weighting £30 p.a. over 26 years. Applicants must have had experience in handling jobs in progress, dealing with contracts and in planning and designing schemes of multi-storey flats.
Application forms from Town Clerk, Town Hall, S.W.6. Closing date 24th August, 1955. 2326

COUNTY BOROUGH OF STOCKPORT.
ARCHITECTURAL ASSISTANT required. Salary £600—£725 (Temp. but with prospects of permanency). Applications with tabulated details of age, qualifications, experience and appointments held, together with copies of two recent testimonials to Borough Surveyor, Town Hall, Stockport, by 31st August. 2284

THE LONDON HOSPITAL, WHITECHAPEL, E.1, requires JUNIOR ARCHITECTURAL ASSISTANT. Salary £440 to £650 p.a., according to experience, plus London Weighting. Post superannuable. Applications stating age, present salary and brief particulars of experience to be sent to the House Governor.
If successful applicant is a woman, accommodation is available at a hotel run by the hospital in Kensington. 2363

Architect in City Office of large organisation requires ARCHITECTURAL DRAUGHTSMEN with several years' drawing office experience. Must be quick neat and accurate. Salary £500—£700, according to experience.
Applications stating age, qualifications, detailed experience and present salary, to be addressed to Box 2364.

VACANCY FOR HOUSING ARCHITECT, DUBLIN CORPORATION.
Application forms and particulars from the Secretary, Local Appointments Commission, 45, Upper O'Connell Street, Dublin, Ireland. Salary: £1,825 inclusive of temporary bonus. Essential qualifications include considerable practical experience in the design and construction of large scale housing schemes and a good knowledge of (i) design and construction of multiple flat dwellings; (ii) principles of Town and Regional planning; (iii) preparation of layout plans for large housing areas. *Latest time for receiving completed application forms:* 5.0 *p.m. on 9th September*, 1955. 2365

Tenders Invited

6 lines or under, 12s. 6d.: each additional line, 2s.

FOR SALE BY TENDER.
WALTHAMSTOW BOROUGH COUNCIL.
PLAN PRINTING MACHINE.
The Council invites offers for the purchase and removal of the undermentioned machine which is in working order, but is surplus to present requirements :—
Mason's Horizontal Photo Copier, Model No. A79/4857, fitted with one 10/11 amp. arc lamp, complete with choke and nine arc lamp glasses.
The machine may be inspected at Fulbourne Road Depot, Walthamstow, during normal office hours, and, if necessary, further particulars obtained from the Supplies Officer at the Town Hall.
Tenders for the machine should be addressed to the undersigned in a plain sealed envelope, endorsed "Tender for Plan Printing Machine" and should reach him by the first post Monday, 5th September, 1955.

G. A. BLAKELEY,
Town Clerk.

Town Hall,
Walthamstow, E.17.
5th August, 1955. 2286

CORPORATION OF KIRKCALDY.
CREMATORIUM.
KIRKCALDY TOWN COUNCIL invite TENDERS for the following works required for the ERECTION of a CREMATORIUM at DUNNIKIER PARK, KIRKCALDY, namely :—
(1) Excavation, mason and brickwork;
(2) Carpenter, joiner and glazier works;
(3) Plumber work;
(4) Plaster and wall tile works;
(5) Slater work;
(6) Painter work;
(7) Electrical work.
The foregoing works may be undertaken by one Contractor embodying all Trades, with the exception of Electrical Work, or in individual Trades.
Application for Forms of Tender and Schedules of Quantities should be made to the undernoted addresses where Plans and Conditions of Contract will be available for inspection during normal business hours.
Messrs. James Gentles & Son, Quantity Surveyors.
Kirkcaldy Address: Osborne House, Kirkcaldy.
Edinburgh Address: 3, Hill Street, Edinburgh, 2.
Plans only may be inspected at the office of the Architects, Messrs. Sanger & Rothwell, York Chambers, Yorkshire Street, Oldham. Forms of Tender and Schedules will be issued to applicants as and when available. Sealed Tenders in special envelopes to be marked "Kirkcaldy Crematorium —Tender for Work" are to be delivered to the Undersigned not later than the date indicated in the Instructions to Tenderers. The date for the lodging of tenders will be approximately four weeks from the date on which forms of tender are available.

CHARLES D. CHAPMAN,
Town Clerk.

Town House,
Kirkcaldy. 2316

Architectural Appointments Vacant

4 lines or under. 7s. 6d.: each additional line. 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 *inclusive or a woman aged* 18-59 *inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order*, 1952.

ASSISTANT required in busy practice in West End, in early twenties, about Intermediate R.I.B.A. standard. Excellent opportunities for gaining all round experience. Box 1942.

LONDON Architect practising N.W.3. district with large programme of work abroad, including multi-storey hospitals, requires a keen and experienced SENIOR ASSISTANT, also an ASSISTANT with a minimum of three years' office experience. Reply giving details of experience and state salary required. Box 2361.

ASSISTANT wanted—apply Skinner, Bailey & Lubetkin, 58, Queen's Gardens, W.2. PAD 1637. 2344

RAMSEY, MURRAY & WHITE have a vacancy for ARCHITECTURAL ASSISTANT, about Intermediate standard, preferably with office experience. Salary according to qualifications. Apply 32, Wigmore Street, London, W.1, or telephone WELbeck 1409. 9823

ARCHITECTURAL ASSISTANT (Intermediate standard) required at once for varied practice in City office. Write, stating age, experience, and salary required, to Henry C. Smart & Partners, L.R.I.B.A., 120, Moorgate, E.C.2. 1611

ARCHITECTURAL ASSISTANTS required urgently for London office. Intermediate stage or above, and with practical experience, particularly in traditional domestic and other work. Please write stating age, experience, and salary required to Box 9896.

ARCHITECT'S ASSISTANT required for the London office of a firm of Architects with interests throughout the country, must be of Intermediate to Final R.I.B.A. standard. Superannuation scheme. Apply in writing to Messrs. Cotton, Ballard & Blow, 133a, Wembley Park Drive, Wembley, Middlesex. 1763.

ARCHITECTURAL ASSISTANT required, up to at least intermediate standard, Westminster Office. Pension and Bonus schemes, five-day week. Write stating experience, age and salary required. Box 2214.

REQUIRED in small office, Westminster: ARCHITECT'S ASSISTANT with Inter. R.I.B.A. Able to do working drawings to all scales. Quick draughtsman. Salary by arrangement. Box 2231.

ARCHITECTURAL ASSISTANTS (2) required in City Office with a wide and comprehensive range of commissions. Salary range £559—£830. Seely & Paget. Central 0321. 2256

ARCHITECT'S ASSISTANT required in West End Office. Salary £700 to £800. Write stating age and experience to Box K531, Willings, 362, Grays Inn Road, W.C.1. 2240

ARCHITECTURAL ASSISTANT (One); BUILDING DRAUGHTSMAN (One).
West of Scotland Building Contractors require an ARCHITECTURAL ASSISTANT with design ability and capable of preparing working drawings. An ARCHITECTURAL or BUILDING DRAUGHTSMAN with experience is also required. Varied work. Pension scheme. Good working conditions and salary. Five-day week. Applications stating age, qualifications and experience, to Box 2281.

ARCHITECTURAL ASSISTANTS, Intermediate and Final standard, required immediately in busy established Architect's office, North of London. Varied work of contemporary character comprising industrial, commercial and housing projects. Please reply, giving details of experience, qualifications, when available and salary required, to Box 2243.

SENIOR ASSISTANT ARCHITECTS required for medium sized but busy West End Office, capable of controlling schemes throughout and working mainly on own initiative. Works in hand include Housing, Offices, Churches, etc., Apply stating qualifications, experience, age and salary required, to Box 2221.

YOUNG ASSISTANT required to Staff Architect of Progressive Combine with H.Q. in London and branches throughout the country. Able to run small contracts and to work with minimum of supervision. Occasional travelling involved. Contributory Superannuation scheme. Write giving full details to Box 2278.

SENIOR ARCHITECTURAL ASSISTANT required in office in Charing Cross District. Must be experienced. Write stating age, experience and salary required to Box L.532, Willings, 362, Grays Inn Road, W.C.1. 2241

ASSISTANT for a busy small office, with variety of interesting work. No guarantee of permanency, but this could, by good work and suitability, become almost inevitable. About Final standard and some good office experience is what we are looking for; Associateship is by no means essential. We think salary between £600—£750, but proved ability in the right man (or woman) could soon raise this figure. Please give full details. Spence & Price, A./A.R.I.B.A., 26, St. Mary's Place, Newcastle upon Tyne, 1. 2117

ARCHITECTURAL ASSISTANT required at once in Central London office for works of varied character. Practical experience desired: Final standard or near. Good salary to the right man. Five-day week. 'Phone Chancery 5211 or write Box 2236.

COMPETENT ASSISTANTS, Intermediate to Final standard, required by busy Architects. Salaries on A.P.T. grades basis. Applications with particulars to Herbert, Son & Sawday, F. & A./A.R.I.B.A., 18, Friar Lane, Leicester. 2237

BANK Architect's Department in City requires JUNIOR ASSISTANT age about 20-25 having completed or obtained exemption from National Service. Write stating age, particulars of experience and salary required. Permanency for suitable applicant subject to probationary period. Box 2261.

ARCHITECTURAL ASSISTANTS of R.I.B.A. Final or Intermediate Standard (or equivalent) required immediately for busy private practice, 50 miles London. Salary is in accordance with age and experience. Assistance given with accommodation if required. Please send full details to Box 2229.

QUALIFYING or QUALIFIED ASSISTANTS wanted in London Architects office with wide and varied practice. Apply stating age, experience and salary required. Box 2092.

JUNIOR ASSISTANTS up to Intermediate Standard required immediately for busy general practice. Apply stating age, experience and salary required to George E. Clay & Partners, A.A.R.I.B.A., 198, Farrock Street, Gravesend, Kent. 2279

JUNIOR ARCHITECTURAL ASSISTANT required in small general practice with contemporary outlook. Write stating full particulars and salary required to Messrs. Percy, Hopkins & Partners, 19, Commercial Road, Woking. 2219

ARCHITECTURAL ASSISTANTS required for Coventry and London. All Grades. These positions offer excellent experience in wide variety of work, with salaries closely related to capabilities and reviewed September annually. Pension Scheme available. Travelling expenses paid to applicants selected for interview. W. S. Hattrell & Partners, 1, Queen's Road, Coventry, and 14, Hanover Square, London, W.1. 2211

IMPERIAL CHEMICAL INDUSTRIES LIMITED, Plastics Division, require an ARCHITECTURAL ASSISTANT in the Engineering Department at Welwyn Garden City. Applicants should have passed the Intermediate examination of the Royal Institute of British Architects and it would be to advantage if they had spent a few years in an Architect's office. Five-day, 35-hour week. Write for application form to The Staff Manager, I.C.I. Ltd., Plastics Division, Black Fan Road, Welwyn Garden City, Herts. 2172

ASSISTANT of Intermediate Standard with general all-round ability required. Telephone Richmond 5412. 2174

SENIOR ASSISTANT required for University and Hospital Work. Good salary, dependent on experience. Non-contributory pension scheme in being after probationary period. Three weeks holiday a year, and five day week. Reply, stating age and experience, to:—Thomas Worthington & Sons, 1/8, Oxford Road, Manchester, 15. 2209

ASSISTANT ARCHITECT required in small office Intermediate standard or above, with office experience. Work varied and interesting. Must be keen and conscientious. Write stating full particulars and salary required, to Geo. H. Herring, F.R.I.B.A., 21, Milton Road, Harpenden, Herts. 2202

COMPETENT ARCHITECTURAL ASSISTANT required. Able to take charge if required. Partnership considered for suitable man. Manchester area. State age, experience and all particulars to Box 2199.

LLEWELLYN SMITH & WATERS invite applications from (*a*) QUALIFIED ARCHITECTS to take charge of large industrial projects. Experience of job management and knowledge of present-day constructional forms is essential. (*b*) QUALIFIED and UNQUALIFIED SENIOR and JUNIOR ASSISTANTS to work on these and other projects. (*c*) In Worcester Office, ASSISTANT of R.I.B.A. Inter. Standard with three years' office experience. Preferably with experience of job supervision and specifications. Salary according to experience and ability. Write 103, Old Brompton Road, S.W.7. 2198

ARCHITECTURAL ASSISTANT with at least three years' drawing office experience required by City firm. Knowledge of industrial and commercial buildings an advantage. Good salary and prospects. Box 2196.

ARCHITECT'S ASSISTANT required by small busy office in Essex to handle work of a contemporary nature. Office offers varied experience to assistant. Five-day week. Salary according to experience. Please write or 'phone Tingey Associates, 29a, Longbridge Road, Barking, Essex. Rippleway 1313. 2195

WESTWOOD, SONS & HARRISON, F./F.R.I.B.A., urgently require a SENIOR ARCHITECTURAL ASSISTANT, A.R.I.B.A. standard, with office experience; also JUNIOR ASSISTANT. Apply in writing, giving qualifications, to 46, Baker Street, W.1. 1958

ARCHITECTURAL ASSISTANT required for work in the City. State age, experience, and salary required, to Clifford Strange, 5, London Wall Buildings, E.C.2. 1910

ARCHITECTURAL ASSISTANTS required in West End Architect's offices. Those studying for Inter. to Final R.I.B.A. Examination or qualified. Varied practice, specialising somewhat in factories, City offices and stores. Write, giving full particulars, to Box P.514, Willing's, 362, Grays Inn Road, W.C.1. 2109

CAPABLE ARCHITECTURAL ASSISTANT required. Must be experienced and enthusiastic. Reply, with particulars and salary required, to: George Coles, F.R.I.B.A., 40, Craven Street, W.C.2. 2107

ASSISTANTS required in Architect's office (London, W.C.). Must be experienced and capable. General practice. Scope for advancement. Write Box N.513, Willing's, 362, Grays Inn Road, W.C.1. 2108

ARCHITECTURAL ASSISTANTS required. Varied work. Salaries £700 to £750. Write, stating age, training, experience, present salary. All interview expenses paid. G. de C. Fraser, Son & Gearey, Chartered Architects, 27, Dale Street, Liverpool. 2153

ARCHITECTURAL ASSISTANT required by Major Oil Company undergoing expansion, for its Sheffield office. Applicants should be of Intermediate standard, and must be capable of carrying out work on the design and re-modelling of service stations. Social Club, Pension and Life Assurance scheme, generous sickness benefits. Write, giving full details of experience, age and salary required, to Box 9262, quoting Ref. A.A. 588.

RONALD WARD & PARTNERS require several capable ARCHITECTURAL ASSISTANTS, with contemporary outlook and willing to use own initiative. Salary range £400 to £800. Interesting and varied work, home and abroad. Congenial working conditions. Apply 29, Chesham Place, Belgrave Square, S.W.1. Telephone: Belgravia 5501. 2135

ARCHITECTURAL ASSISTANT required, Intermediate to Final standard, with office experience, for small busy practice. Shaw & Lloyd, F.R.I.B.A., 74, Gt. Russell Street, W.C.1. MUSeum 9695. 2146

ARCHITECTURAL ASSISTANT required for busy office. Interesting commercial and industrial work. Apply, stating age, experience and salary, and enclosing copies of testimonials, to Mr. G. Yarwood, F.R.I.B.A., Architect's Dept., The Barnsley British Co-operative Society, Ltd., Dearne Works, Twibell Street, Barnsley. 2151

ARCHITECTURAL ASSISTANT required, Inter.-standard or recently qualified. Small contemporary practice. Opportunities for site experience and running jobs. Salary from £550, according to experience. Apply Challen & Floyd, 7, Cromwell Road, S.W.7. Tel. KENsington 0169. 2146

WANTED—Capable Intermediate standard ASSISTANT in City Office, varied practice, congenial working conditions. Please phone Avenue 5629 or 4430 for appointment. 2380

SENIOR ARCHITECTURAL DRAUGHTSMAN required for Southampton Architects. Good draughtsmanship and sound constructional knowledge essential for a varied practice. Write giving full details, age, experience and salary required to Box 2349.

JUNIOR ARCHITECTURAL ASSISTANT, in early stages of training for full time employment, required for office giving opportunity for varied experience. Ring Thomas F. Ford & Partners (VIC 4953) for appointment. 2342

ARCHITECTURAL ASSISTANT required in busy private office in Surrey—Intermediate standard—write stating age, experience and salary required to Box 2282.

ARCHITECTURAL ASSISTANTS required for the Works Department of the University of Edinburgh, with experience in traditional buildings, alterations and laboratory fittings. Salary scales—Juniors: £350 × £50 to £600 per annum; Intermediate qualifications: £400 × £50 to £650 per annum; Full qualifications: £450 × £50 to £1,000 per annum, with placements according to qualifications and experience. Superannuation Scheme in operation. Applications in writing to the Master of Works, University Works Department, Infirmary Street, Edinburgh, 1. 2310

APPRENTICE to train as ARCHITECTURAL DRAUGHTSMAN required in the Works Department of the University of Edinburgh. Applicants should be keenly interested in Building and Architecture, should have obtained the School Higher Leaving Certificate, and should be prepared to study for the professional examinations in Architecture. Salaries paid to Architectural Draughtsman and Architectural Assistants in this Department rise from £350 per annum on completion of apprenticeship, to £1,000 per annum for fully-qualified and experienced Architectural Assistants. Applications in writing should be made to the Master of Works, University Works Department, Infirmary Street, Edinburgh, 1. 2311

JUNIOR ARCHITECTURAL ASSISTANT required (male or female) in the Architectural Dept. of an old-established firm of Chartered Surveyors. Reply, stating full particulars of experience and salary required, to G. Scott Baird, L.R.I.B.A., 20, Salisbury Street, Blandford Forum, Dorset. 2309

CO-OPERATIVE WHOLESALE SOCIETY LTD., ARCHITECT'S DEPARTMENT, LONDON.

ASSISTANT ARCHITECTS, WORKER-UP, and SHOP FITTING DRAUGHTSMAN. Applications are invited from suitably qualified persons. Salary on a scale £485—£945, inclusive of L.W., with placing according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation.

Applications stating age, experience, qualifications and salary required, to: W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 99, Leman Street, London, E.1 2377

WELSH REGIONAL HOSPITAL BOARD.

APPLICATIONS invited for the permanent post of SENIOR ASSISTANT ARCHITECT. Salary £920 × £30 (5) × £25 (1)—£1,095. Applicants must be registered architects who have passed the final examination of the R.I.B.A. and have had wide experience in planning and construction and in the preparation of working drawings for important buildings. Applications, stating age, qualifications and experience with the names of two referees, should reach the Secretary, Temple of Peace & Health, Cathays Park, Cardiff, within 14 days of this advertisement appearing. 2347

FAIRLY SENIOR ARCHITECTURAL ASSISTANT required in small office in St. Albans, must be able to produce good design and working drawings and be able to carry small and medium sized jobs through to conclusion under own initiative. Must be able to produce clear and concise specifications. Salary by arrangement. Apply: Taylor, Son & Bracken, 20, London Road, St. Albans. 2379

ASSISTANT ARCHITECT required for private office. Should be A.R.I.B.A. having Diploma of a five-year full time Architectural School. Details of experience and salary required, to Box 2343.

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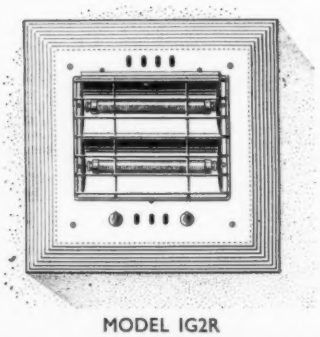
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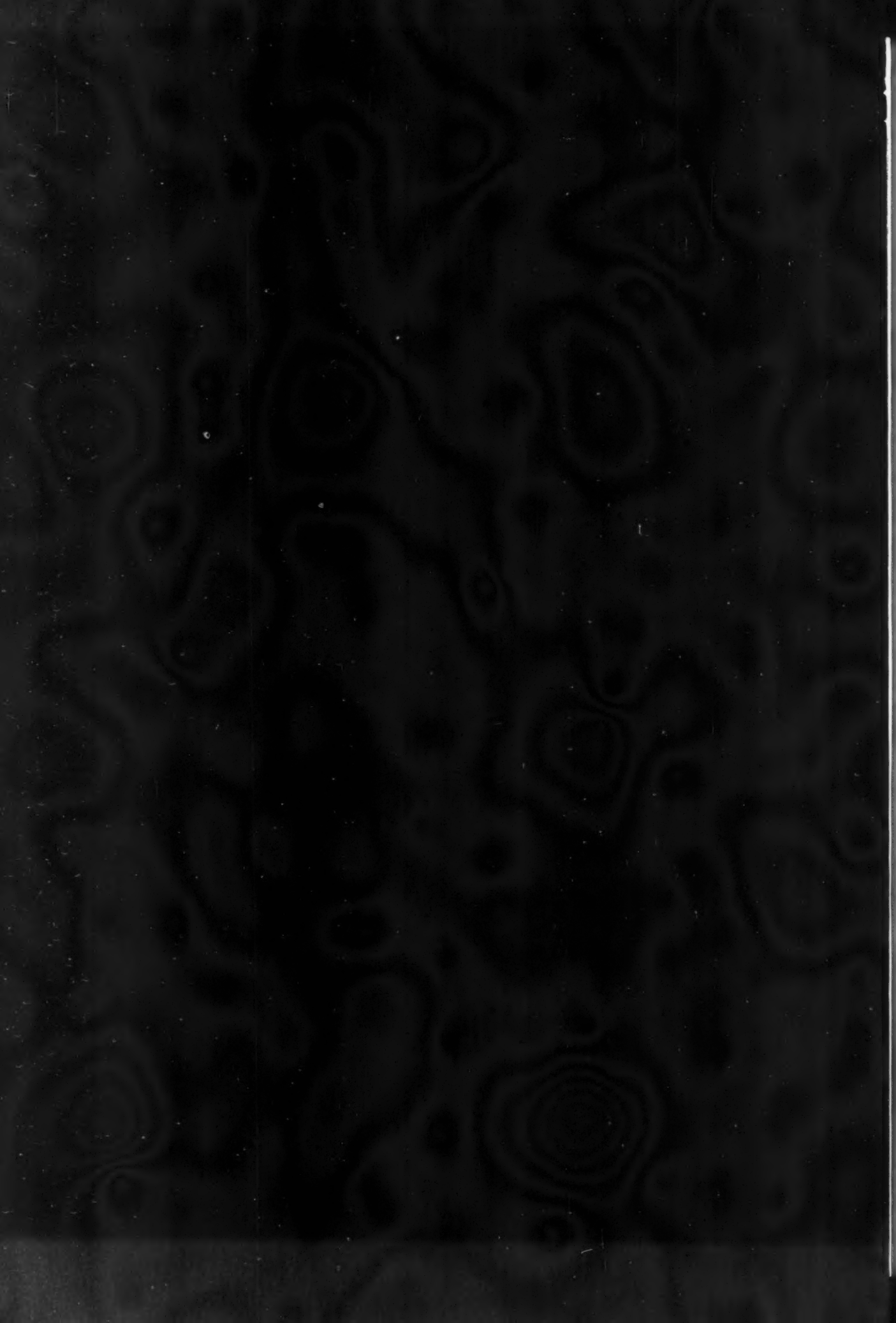
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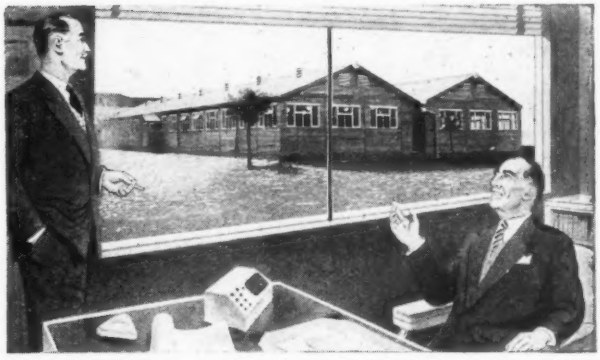


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